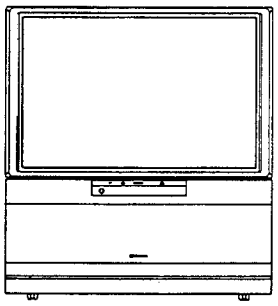
Service Manual

PIONEER®
The Art of Entertainment



The illustration shows model SD-P5185-K.

ORDER NO.
ARP2880

PROJECTION MONITOR RECEIVER

SD-P5185-K
SD-P5183-K
SD-P4683-K
PRO-98

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model				Power Requirement	Remarks
	SD-P5185-K	SD-P5183-K	SD-P4683-K	PRO-98		
KUX1C	○	○	○	○	AC 120V	

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This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTES
(FOR CANADIAN MODEL ONLY)
Fuse symbols ⊣▭⊢ (fast operating fuse) and/or ⊣▭⊠⊢ (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible ⊣▭⊢ (fusible de type rapide) et/ou ⊣▭⊠⊢ (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

1. SAFETY PRECAUTIONS

NOTICE: Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis or picture tube.
The following precautions should be observed:

1. Do not install, remove, or handle the picture tube in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while picture tubes are handled.
   Keep picture tube away from the body while handling.
2. When service is required, even though the PROJECTION MONITOR RECEIVER an isolation transformer should be inserted between power line and the set in safety before any service is performed.
3. The cut metallic sides of internal chassis, frames, etc. of the product may be burred in some cases. Therefore be careful not to injure your hands, etc. when handling the chassis, frame, etc.
4. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
5. When service is required, observe the original lead dress.
   Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
6. Always use the manufacturer's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's.
   Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
7. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacturer has become defective, or inadvertently defeated during servicing.

Therefore, the following checks should be performed for the continued protection of the customer and service technician.

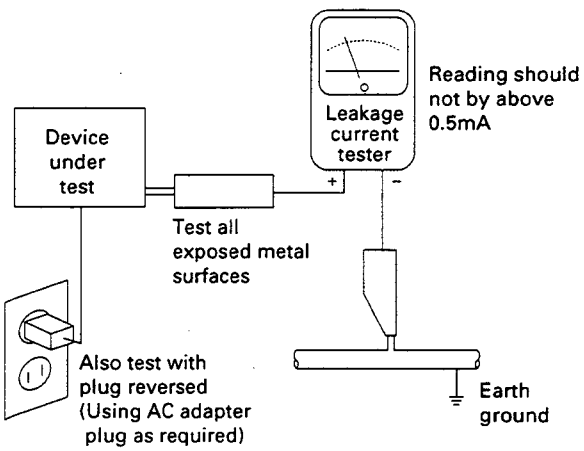
Leakage Current Cold Check

With the AC plug removed from the 120V AC 60Hz source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/ output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 0.3MΩ and a maximum resistor reading of 5MΩ. Any resistor value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into a 120V AC 60Hz outlet (do not use an isolation transformer for this check). Turn the AC power switch on.

Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input / output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

High Voltage

This set is provided with a X-ray protection for clearly indicating that voltage has increased in excess of a predetermined value. Comply with all notes described in this Service Manual regarding this hold down circuit when servicing, so that this X-ray protection may correctly be operated.

Serviceman Warning

In the status of the black picture (video muting is being applied) when no signal is input, high voltage of this set during operation is less than 30.5kV. In case any component having some relation to the high voltage is replaced, confirm that the high voltage is lower than 30.5kV in the status of the black picture when no signal is input.

To measure H.V. use a high impedance H.V. meter.

Connect (-) to earth and (+)to the FBT anode cable connector.

(Refer to page 128)

X-radiation

TUBE: The primary source of X-radiation in this set is the picture tube.

For continued X-radiation protection, the replacement tube must be the same type as the original, PIONEER approved type.

The picture tube (CRT assy R, G, B) use in this set holds complete guarantee against X-ray radiation when the X-ray is sealed (See page 4). Accordingly, when the current in flowing to the picture tube (CRT assy R, G, B), be sure to perform it by putting the tube into X-ray sealed applied state. Avoid absolutely to flow the current to the picture tube (CRT assy R, G, B) itself. Moreover, when the voltage of the high voltage circuit becomes abnormally a little higher, the picture tube radiates X-rays. Accordingly, when servicing the high voltage circuit be sure to replace as an assy with the POWER SUPPLY assy in the manner in which has been adjusted to perform normal operation.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, X-radiation, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

3. CHARGED SECTION, HIGH VOLTAGE GENERATING POINT AND X-RAY PROTECTION

■ Charged section

The circuit in which the commercial AC power is used as it is without passing through the power supply transformer. If the charged section is touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. In this case, be sure to connect the set via an insulated transformer and supply the current.

■ Charged section (Power supply primary side)

1. The primary side of the POWER SUPPLY assy
2. AC power cord
3. MAIN POWER switch

part is the charged section.

part is the high voltage generating points other than the charged section.

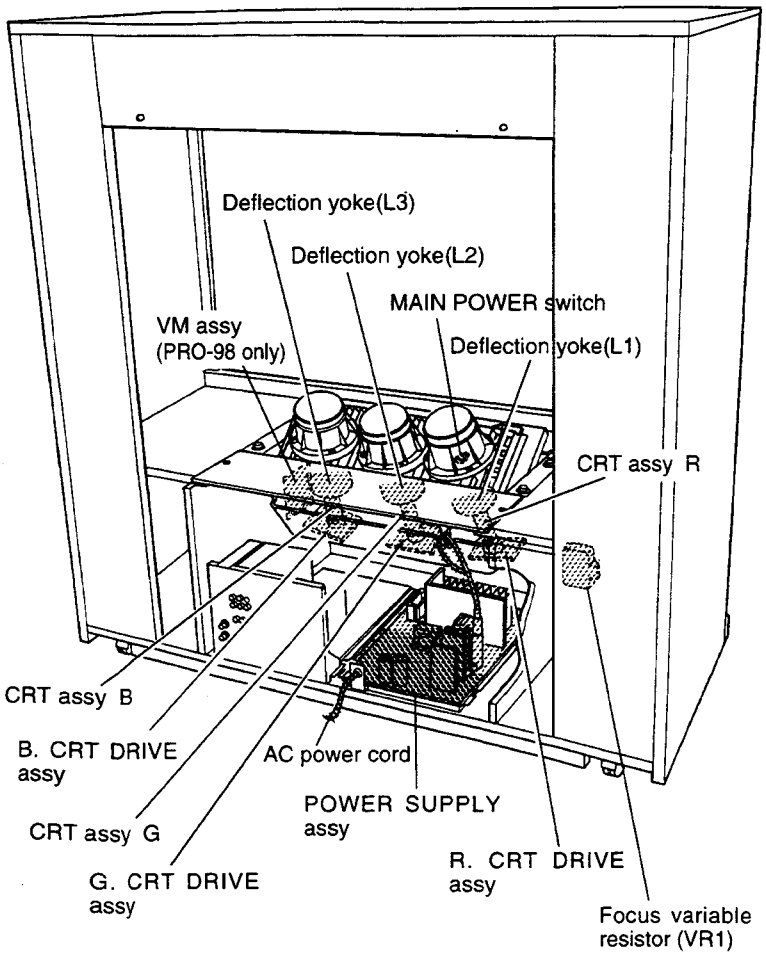


Fig. 1 Charged section and high voltage generating point

■ High voltage generating point

The place where voltage of over 100V is generated.

1. Charged section	
2. POWER SUPPLY assy (including FBT)	(30.0kV, 135V)
3. R. CRT DRIVE assy	(10.5kV)
4. G. CRT DRIVE assy	(10.5kV)
5. B. CRT DRIVE assy	(10.5kV)
6. VM assy(PRO-98 only)	(135V)
7. CRT assy R	(30.0kV)
8. CRT assy G	(30.0kV)
9. CRT assy B	(30.0kV)
10. Focus variable resistor(VR1)	(10.5kV)
11. Deflection yokes (L1, L2 and L3)	Approx. 1100V at perk

■X-ray protection

●Regarding the parts which are relative to radiation of X-rays (There is the danger to radiate X-ray from the individual CRT assy R, G, B), there are notifications of caution in the individual schematic diagrams. Be sure to read them for safety's sake.

●The component parts for X-ray protection are as follows : When the current flows to the CRT assy R, G, B, by sure to perform it with these parts being attached. Protection from the X-ray radiation is maintained in the state in which these parts have been installed to the CRT assy R, G, B. Accordingly, never supply current only to the CRT assy R,G,B.
Moreover, the anode voltage of the CRT assy R, G, B should always be kept not higher than the predetermined value (in the minimum brightness and picture state when non signal input is higher than 30.5kV). Be sure to drive the CRT assy R, G, B by using a completely functional POWER SUPPLY assy which have been adjusted completely in the combined state. (When the voltage abnormally becomes high, the X-ray protection circuit will operate.)

1. CRT assy R, G, B (Do not dismantle CRT assemblies under any circumstances.)
2. Each Lens assy

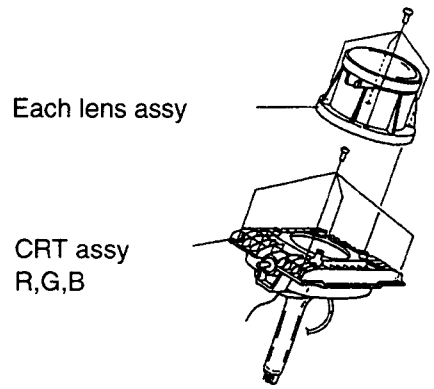


Fig. 2 Component parts for X-ray protection

4. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *Parts marked by ☆ are important parts which relate to X-rays radiation.*
  If any of these parts need to be replaced, always replace with specified parts.

Mark	No.	Description	Part No.
⚠☆	1	POWER SUPPLY ASSY (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	AWV1499
⚠☆	1	POWER SUPPLY ASSY (PRO-98)	AWV1500
⚠☆	2	CRT ASSY 51(G) (SD-P5185-K AND SD-P5183-K)	AWY1320
⚠☆	2	CRT ASSY 51(G)(PRO-98)	AWY1326
⚠☆	2	CRT ASSY 46(G)(SD-P4683-K)	AWY1314
⚠☆	3	CRT ASSY 51(R) (SD-P5185-K AND SD-P5183-K)	AWY1321
⚠☆	3	CRT ASSY 51(R)(PRO-98)	AWY1327
⚠☆	3	CRT ASSY 46(R)(SD-P4683-K))	AWY1315
⚠☆	4	CRT ASSY 51(B) (SD-P5185-K AND PRO-98)	AWY1322
⚠☆	4	CRT ASSY 46(B)(SD-P4683-K)	AWY1316
	5	U-COM•TUNER ASSY (SD-P5185-K)	AWV1484
	5	U-COM•TUNER ASSY (SD-P5183-K AND SD-P4683-K)	AWV1483
	5	U-COM•TUNER ASSY (PRO-98)	AWV1485
	6	CONVERGENCE ASSY	AWZ5981
	7	R. CRT DRIVE ASSY	AWZ5982
	8	G. CRT DRIVE ASSY	AWZ5983
	9	B. CRT DRIVE ASSY	AWZ6009
	10	POWER SW ASSY	AWZ5984
	11	AV I/O ASSY (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	AWZ5985
	11	AV I/O ASSY (PRO-98)	AWZ5986
	12	Y/C SELECTOR ASSY (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	AWZ5987
	12	Y/C SELECTOR ASSY (PRO-98)	AWZ5988
	13	FRONT CONTROL ASSY (SD-P5185-K)	AWZ5990
	13	FRONT CONTROL ASSY (SD-P5183-K AND SD-P4683-K)	AWZ5989
	13	FRONT CONTROL ASSY(PRO-98)	AWZ6002
	14	P IN P SELECTOR ASSY	AWZ5993
	15	SYSTEM CONTROL ASSY (SD-P5185-K AND PRO-98 ONLY)	AWZ5998
	16	PHOTO DIODE ASSY (SD-P5185-K AND PRO-98 ONLY)	AWZ7657
	17	RF AMP ASSY (SD-P5185-K AND PRO-98 ONLY)	AWZ7658
	18	CONVERGENCE PD ASSY	AWZ5991
	19	P IN P ASSY	AWZ5992
	20	A CONNECTOR ASSY	AWZ5994
	21	B CONNECTOR ASSY	AWZ5995
	22	C CONNECTOR ASSY	AWZ5996
	23	RELAY DRIVE ASSY	AWZ5999
	24	SUB CONVERGENCE ASSY	AWZ6001
	25	VM ASSY (PRO-98 ONLY)	AWZ5997
	26	FRONT INPUT ASSY (PRO-98 ONLY)	AWZ6003
	27	IR RECEIVER ASSY (PRO-98 ONLY)	AWZ6004
	28	PRO S. G ASSY(PRO-98 ONLY)	AWZ6005
	29	CENTER SP SW ASSY (PRO-98 ONLY)	AWZ6006
	30	SUB RECEIVE ASSY (PRO-98 ONLY)	AWZ6007
	31	EXT. SP ASSY(PRO-98 ONLY)	AWZ6008
⚠	32	VR1 FOCUS VR	ACX1096
⚠	33	L1 DEFLECTION YOKE	ATL1112
⚠	34	L2 DEFLECTION YOKE	ATL1112
⚠	35	L3 DEFLECTION YOKE	ATL1112
⚠	36	FU104 FUSE(6.3A, 125V)	AEK-309
⚠	37	FU102 FUSE(4A, 125V)	AEK1018
⚠	38	FU105 FUSE(4A, 125V)	AEK1018
	39	CONE SPEAKER	APV1021
	40	MINI REPEATER (SD-P5185-K AND PRO-98 ONLY)	ADF1002
⚠	41	AC POWER CORD	ADG1058
	42	MAIN REPEATER (SD-P5185-K AND PRO-98 ONLY)	AXF1079
	43	J11 4P HOUSING WIRE	ADX2179
	44	J4 1P LEAD WIRE	ADX2180
	45	J5 1P LEAD WIRE	ADX2181
	46	J6 1P LEAD WIRE	ADX2182
	47	J7 1P LEAD WIRE	ADX2183
	48	J8 1P LEAD WIRE	ADX2184
	49	J9 1P LEAD WIRE	ADX2185
	50	J2 2P HOUSING WIRE	ADX2187
	51	WIRE HARNESS	ADX2195
	52	J24 4P HOUSING WIRE (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	ADX2196
	53	• • • • •	

Mark	No.	Description	Part No.
	54	J11 8P HOUSING WIRE (PRO-98 ONLY)	ADX2199
	55	J12 7P HOUSING WIRE (PRO-98 ONLY)	ADX2200
⚠	56	J1 ANODE CABLE (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	ADY1012
⚠	56	J1 ANODE CABLE (PRO-98)	ADY1022
NSP	57	CRT STAND (51) (SD-P5185-K, SD-P5183-K AND PRO-98)	ANA1500
NSP	57	CRT STAND (46) (SD-P4683-K)	ANA1501
NSP	58	CRT STAND HOLDER L	ANA1503
NSP	59	CRT STAND HOLDER R	ANA1504
NSP	60	CHASSIS R	ANA1505
	61	REAR PANEL (SD-P5185-K)	ANC2259
	61	REAR PANEL (SD-P5183-K AND SD-P4683-K)	ANC2258
	61	REAR PANEL (PRO-98)	ANC2260
	62	BOTTOM RAIL 51 (SD-P5185-K AND SD-P5183-K ONLY)	AMR2714
	62	BOTTOM RAIL 46 (SD-P4683-K ONLY)	AMR2715
NSP	63	CORD PLATE	ANG1650
NSP	64	PCB FRAME	ANG1849
NSP	65	SWITCH HOLDER (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	ANG1945
NSP	66	VR HOLDER	ANG1956
NSP	67	SCREEN METAL FITTING (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	ANG1992
NSP	68	SCREEN SIDE FITTING	ANG1993
NSP	69	DOLBY MOD. STAY (SD-P5185-K AND PRO-98 ONLY)	ANG1999
	70	• • • • •	
	71	NYLON BINDER	AEC-093
	72	RIVET (SD-P5185-K AND PRO-98 ONLY)	AEC-441
NSP	73	PURSE LOCK S	AEC1261
	74	V ROCK 20M	AEC1610
NSP	75	LEAD CLAMPER M	AEC1611
	76	SCREEN CUSHION 51 (SD-P5185-K AND SD-P5183-K)	AEC1612
	76	SCREEN CUSHION 46 (SD-P4683-K)	AEC1616
	76	SCREEN CUSHION 51P (PRO-98)	AEC1621
	77	INDICATOR PANEL (SD-P5185-K)	AAK2618
	77	INDICATOR PANEL (SD-P5183-K)	AAK2620
	77	INDICATOR PANEL (SD-P4683-K)	AAK2625
	78	FRAME CUSHION (SD-P5185-K AND SD-P5183-K)	AEC1618
	78	FRAME CUSHION 46 (SD-P4683-K ONLY)	AEC1619

Mark	No.	Description	Part No.
	79	BLIND SHEET(PVC)	AEC1622
	80	BACK COVER CUSHION	AEC1625
	81	MIRROR CASE CUSHION	AEC1627
	82	AC CORD STOPPER	AEP-113
	83	BINDER	AEP-215
☆	84	LENS ASSY (51) (SD-P5185-K, SD-P5183-K AND PRO-98 ONLY)	AMR2719
☆	85	LENS ASSY (R) (SD-P4683-K ONLY)	AMR2387
☆	86	LENS ASSY (G) (SD-P4683-K ONLY)	AMR2388
☆	87	LENS ASSY (B) (SD-P4683-K ONLY)	AMR2389
	88	LENTICULAR SHEET(51) (SD-P5185-K AND SD-P5183-K)	AMR2726
	88	LENTICULAR SHEET(46) (SD-P4683-K)	AMR2730
	88	LENTICULAR SHEET(51) (PRO-98)	AMR2751
	89	MIRROR(51A)	AMR2735
	90	FRESNEL (51) (SD-P5185-K AND SD-P5183-K)	AMR2758
	90	FRESNEL (46) (SD-P4683-K)	AMR2759
	90	FRESNEL (51) (PRO-98)	AMR2754
	91	SPECIAL SCREW	ABA1080
	92	SCREW	ABA1099
	93	SPECIAL SCREW	ABA1121
	94	SCREW	ABA1149
	95	SCREW	ABA1168
	96	SCREW	ABA1188
	97	M5 SCREW	ABA1189
	98	SCREW	ABA1190
	99	SPECIAL SCREW (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	ABA1225
	100	SPECIAL SCREW (PRO-98 ONLY)	ABA1226
NSP	101	BOTTOM RAIL HOLDER (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	ANG1991
	102	SCREW	ABZ30P080FZK
	103	SCREW	ABZ30P120FZK
	104	SCREW	ACZ40P080FMC
	105	SCREW	AMZ40P080FZK
	106	SCREW (PRO-98 ONLY)	APZ30P080FZK
	107	SCREW (PRO-98 ONLY)	APZ40P120FZK
	108	SCREW	BBZ30P080FZK
	109	SCREW	BBZ30P120FZK
	110	SCREW (PRO-98 ONLY)	BMZ40P100FZK
	111	SCREW (SD-P5185-K AND SD-P5183-K ONLY)	BPZ30P120FZK
	112	SCREW	PYC35T160FZK
	113	SCREW	BYC35P160FZK
	114	SCREW	BYC40P160FMC
	115	SCREW	BYC40P180FMC
	116	SCREW	FBT40P120FZK
	117	SCREW (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	PMB30P080FZK
	118	SCREW	VBT30P080FZK
	119	SCREW	VCZ30P060FMC

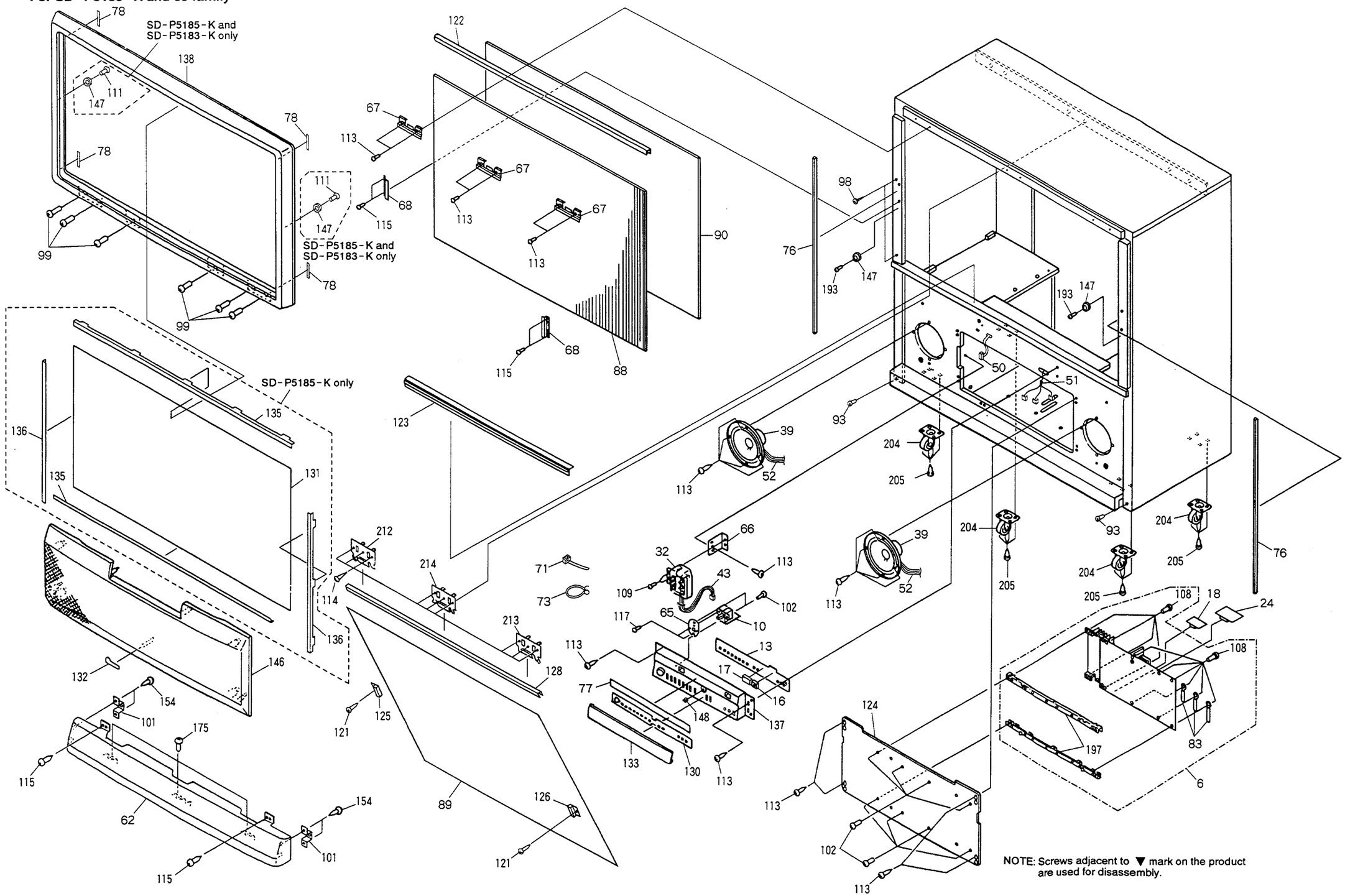
Mark	No.	Description	Part No.
	120	SCREW (PRO-98 ONLY)	VPZ40P120FMC
	121	SCREW	VPZ40P160FZK
	122	SCREEN HOLDER TOP 51 (SD-P5185-K AND SD-P5183-K)	AAP1500
	122	SCREEN HOLDER TOP 46 (SD-P4683-K)	AAP1501
	122	SCREEN HOLDER TOP 51P (PRO-98)	AAP1525
	123	SCREEN HOLDER LOW 51P (SD-P5185-K AND SD-P5183-K)	AAP1503
	123	SCREEN HOLDER LOW 46 (SD-P4683-K)	AAP1504
	123	SCREEN HOLDER LOW 51P (PRO-98)	AAP1522
	124	BLIND PLATE	AMM2414
	125	MIRROR SIDE HOLDER L	AMR2470
	126	MIRROR SIDE HOLDER R	AMR2471
NSP	127	TRAY (PLS)	AMR2563
	128	MIRROR FRAME H	ANG2019
NSP	129	ACRYLIC PANEL(51) (PRO-98 ONLY)	AAK2632
	130	CONTROL SHEET (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	AAK2619
	131	SCREEN COVER PANEL(51) (SD-P5185-K ONLY)	AAK2628
	132	BADGE (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	AAM1069
	132	BADGE (PRO-98)	AAM1062
	133	DOOR (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	AAN1406
	134	DOOR ASSY (PRO-98 ONLY)	AAN1413
NSP	135	PANEL HOLDER (51H) (SD-P5185-K ONLY)	AAP1538
NSP	136	PANEL HOLDER (51V) (SD-P5185-K ONLY)	AAP1539
	137	CONTROL PANEL (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	AMB2524
	138	SCREEN FRAME ASSY 51A (SD-P5185-K)	AMB2550
	138	SCREEN FRAME ASSY 51 (SD-P5183-K)	AMB2547
	138	SCREEN FRAME ASSY 46 (SD-P4683-K)	AMB2548
	138	SCREEN FRAME ASSY 51 (PRO-98)	AAP1514
	139	FRAME COVER ASSY (51) (PRO-98 ONLY)	AAP1520
	140	FRAME COVER V (51) (PRO-98 ONLY)	AAP1536
	141	MIRROR CASE (51)	AME2296
NSP	142	BACK COVER PANEL 51 (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	AMM2415
NSP	142	BACK COVER PANEL 51(B) (PRO-98)	AMM2507
	143	CORRUGATION BOARD CASE 51 (SD-P5185-K AND PRO-98 ONLY)	AHB1152
	144	REAR COVER	AMM2416
NSP	145	CRT BACK BOARD	AMM2417
	146	GRILLE 51 (SD-P5185-K AND SD-P5183-K)	AMR2711
	146	GRILLE 46 (SD-P4683-K)	AMR2712
	146	GRILLE (51) (PRO-98)	AMR2491
	147	MAGIC TAPE	AEC1394
	148	CATCHER F2M	AEC1609
	149	OPERATING INSTRUCTIONS (ENGLISH) (SD-P5185-K)	ARB1493
	149	OPERATING INSTRUCTIONS (ENGLISH) (SD-P5183-K AND SD-P4683-K)	ARB1492
	149	OPERATING INSTRUCTIONS (ENGLISH) (PRO-98)	ARB1495
	150	ATTENTION CARD	ARM1054
NSP	151	P IN P NOTES	ARM1066
NSP	152	SAFEGUARD CARD	ARM1075
	153	CONVER ATTENTION CARD	ARM1109
	154	SCREW (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	BYC35P120FZB
NSP	155	WARRANTY CARD (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	ARY1050
NSP	155	WARRANTY CARD (PRO-98)	ARY1026
	156	REMOTE CONTOROL(GUI) ASSY (CU-SD092) (SD-P5185-K AND PRO-98)	AXD1415
	156	REMOTE CONTOROL ASSY (CU-SD091) (SD-P5183-K AND SD-P4683-K)	AXD1416
	157	BATTERY COVER	AZN7187
NSP	158	ALKALINE BATTERY(LR6, AA)	AEX1018
	159	UPPER PAD L (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	AHA2056
	159	UPPER PAD L (PRO-98)	AHA2067
	160	UPPER PAD R (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	AHA2057
	160	UPPER PAD R (PRO-98)	AHA2068
	161	UNDER PAD L (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	AHA2058
	161	UNDER PAD L (PRO-98)	AHA2069
	162	UNDER PAD R (SD-P5185-K, SD-P5183-K AND SD-P4683-K)	AHA2059
	162	UNDER PAD R (PRO-98)	AHA2070
NSP	163	CUSHION A	AHA2074
	164	CU PACKING CASE (SD-P5185-K AND PRO-98)	AHC1023
	164	CU PACKING CASE (SD-P5183-K AND SD-P4683-K)	AHC1019
	165	UPPER CARTON (51A) (SD-P5185-K)	AHD2799
	165	UPPER CARTON (51) (SD-P5183-K)	AHD2792
	165	UPPER CARTON (46) (SD-P4683-K)	AHD2797
	165	UPPER CARTON (51) (PRO-98)	AHD2807
	166	UNDER CARTON (51) (SD-P5185-K AND SD-P5183-K)	AHD2793
	166	UNDER CARTON (46) (SD-P4683-K)	AHD2798

Mark	No.	Description	Part No.
	166	UNDER CARTON (51) (PRO-98)	AHD2808
	167	CORRUGATION BOARD SPACER (51A) (SD-P5185-K ONLY)	AHB1159
	167	CORRUGATION BOARD SPACER (51) (PRO-98 ONLY)	AHB1161
NSP	168	PACKING SEAT M	AHG1094
NSP	169	VINYL SEAT XL	AHG1095
NSP	170	PACKING SHEET	AHG1156
NSP	171	PACKING SHEET(PRO-98 ONLY)	AHG1120
NSP	172	VINYL BAG(PRO-98 ONLY)	AHG1076
NSP	173	LITERATURE BAG	AHG1222
NSP	174	SCREEN SHEET (51)	AHG1228
	175	SCREW (SD-P5185-K, SD-P5183-K AND SD-P4683-K ONLY)	ABA1223
NSP	176	ACRYLIC PACKING SHEET(51) (SD-P5185-K ONLY)	AHG1237
NSP	177	BNC SOCKET (PRO-98 ONLY)	AKX1036
	178	SUB PANEL ASSY(PRO-98 ONLY)	AMB2556
	179	SIDE PANEL ASSY (51L) (PRO-98 ONLY)	AMB2558
	180	SIDE PANEL ASSY (51R) (PRO-98 ONLY)	AMB2559
	181	FRONT PANEL ASSY (PRO-98 ONLY)	AMB2562
	182	BNC CAP (PRO-98 ONLY)	AMR2314
	183	SIDE COVER (PRO-98 ONLY)	AMR2573
NSP	184	CABINET UPPER HOLDER (PRO-98 ONLY)	ANG2000
NSP	185	SCREEN UPPER HOLDER A (PRO-98 ONLY)	ANG2001
NSP	186	SCREEN UPPER HOLDER B (PRO-98 ONLY)	ANG2002
NSP	187	SCREEN UNDER HOLDER A (PRO-98 ONLY)	ANG2003
NSP	188	SCREEN UNDER HOLDER B (PRO-98 ONLY)	ANG2009
NSP	189	FRONT SHIELD(PRO-98 ONLY)	ANK1502
NSP	190	CATCH A (PRO-98 ONLY)	ANZ-241
	191	CONE SPEAKER(TWEETER) (PRO-98 ONLY)	APT1004
	192	TECHNICAL NOTE (PRO-98 ONLY)	ARB1496
	193	SCREW	BYC35P160FZB
	194	ACRYLIC CAUTION CARD (SD-P5185-K)	ARH1149
	194	ACRYLIC CAUTION CARD (PRO-98)	ARH1146
	195	ATTENTION CARD (ELITE) (PRO-98 ONLY)	ARM1108
	196	VM COIL (PRO-98 ONLY)	ATL1121
NSP	197	CONVERGENCE STAY	AND1058
NSP	198	CHASSIS L	ANA1509
	199	SCREW	PPZ40P120FMC
	200	SCREW	ABZ30P100FMC
	201	BADGE BASE ASSY (PRO-98 ONLY)	AAK2641
NSP	202	CR HOLDER (PRO-98 ONLY)	ANG1867

Mark	No.	Description	Part No.
⚠	203	FU101 FUSE (8A, 125V)	AEK1002
	204	CASTER	AMR2547
	205	SCREW	ABA1126
	206	COIL SPRING (PRO-98 ONLY)	ABH1099
NSP	207	SUB PANEL (PRO-98 ONLY)	AMB2555
	208	POWER KNOB (PRO-98 ONLY)	AAD4090
NSP	209	BADGE BASE (PRO-98 ONLY)	AAK2631
	210	TV FRONT-END SYSTEM UNIT	AXF1077
	211	RF SWITCH	AXF1078
NSP	212	MIRROR UPPER STAY L	ANG2004
NSP	213	MIRROR UPPER STAY R	ANG2005
NSP	214	MIRROR UPPER STAY C	ANG2006
NSP	215	PACKING SHEET	AHG1237
	216	REPEATER PACKING CASE (SD-P5185-K AND PRO-98 ONLY)	AHC1024
	217	MAIN REPEATER (SD-P5185-K AND PRO-98 ONLY)	AXF1079
	218	MAGIC TAPE A (SD-P5185-K AND PRO-98 ONLY)	AEC1630
	219	MAGIC TAPE B (SD-P5185-K AND PRO-98 ONLY)	AEC1631
	220	MINI REPEATER (SD-P5185-K AND PRO-98 ONLY)	ADF1002
	221	FRONT SHEET(PVC) (PRO-98 ONLY)	AEC1635
	222	FRAME CUSHION P (PRO-98 ONLY)	AEC1634

(1) FRONT VIEW [1]

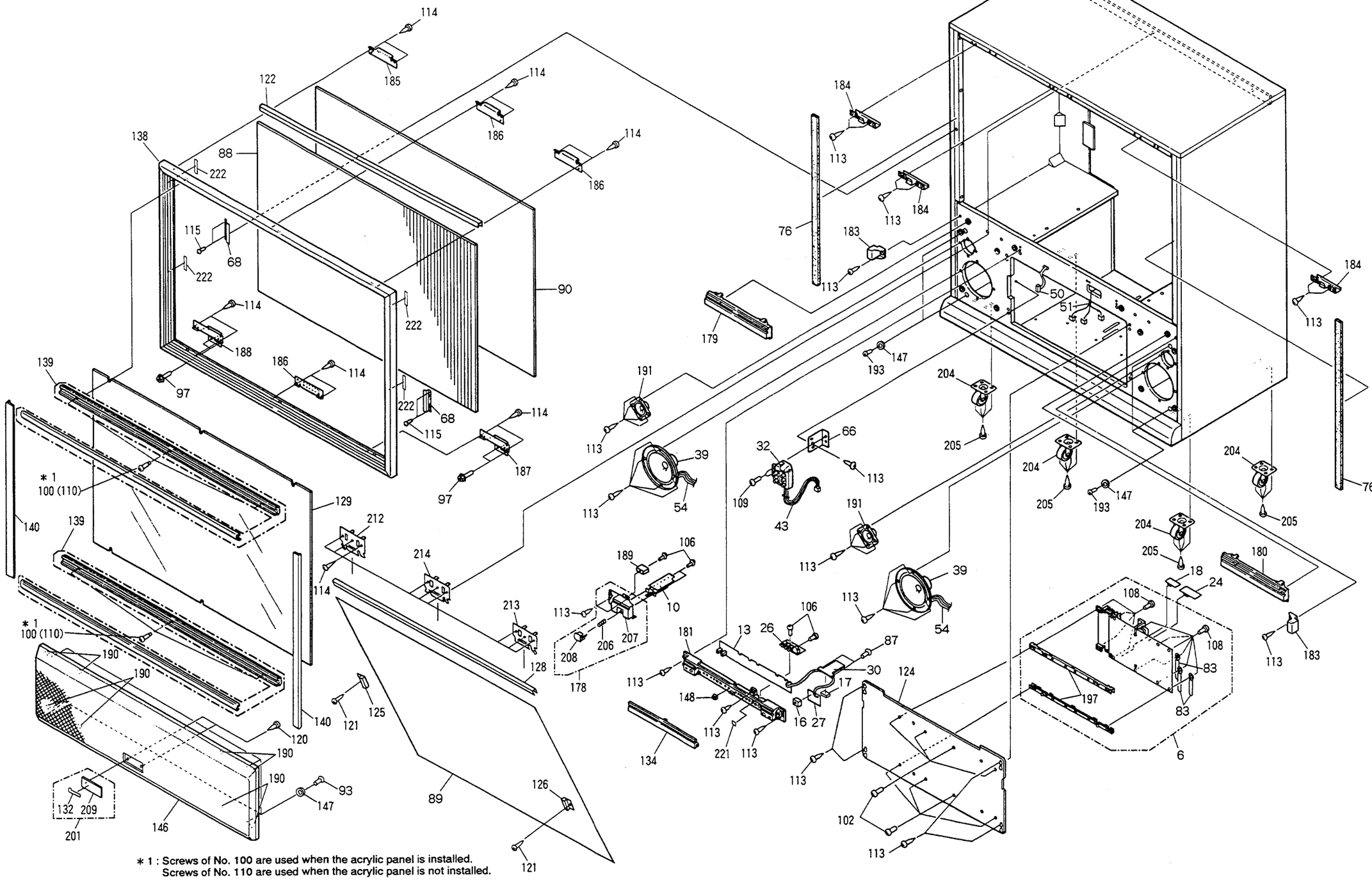
- **For SD-P5185-K and 83 family**



NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

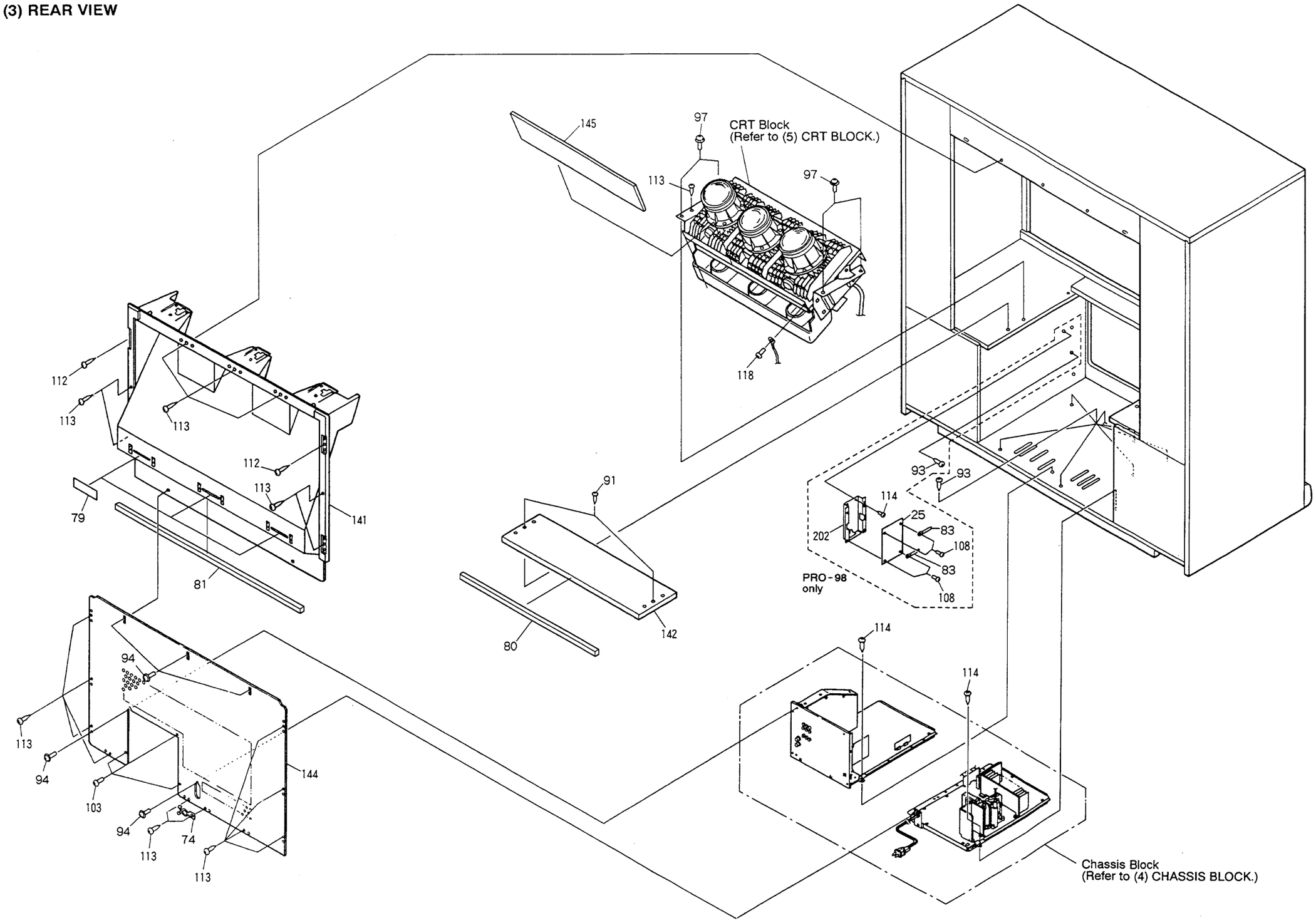
(2) FRONT VIEW [2]

- For PRO-98

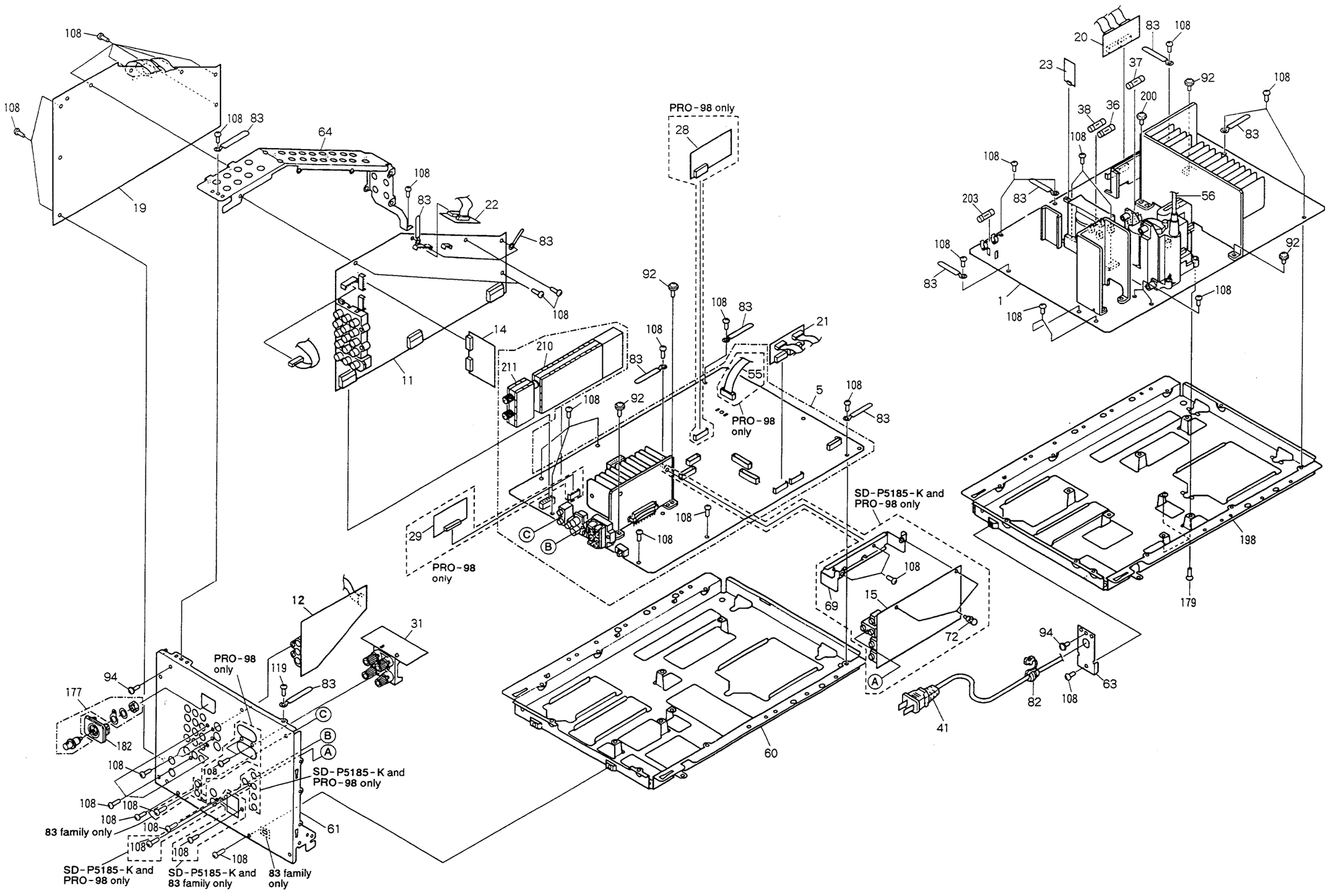


* 1 : Screws of No. 100 are used when the acrylic panel is installed.
Screws of No. 110 are used when the acrylic panel is not installed.

(3) REAR VIEW

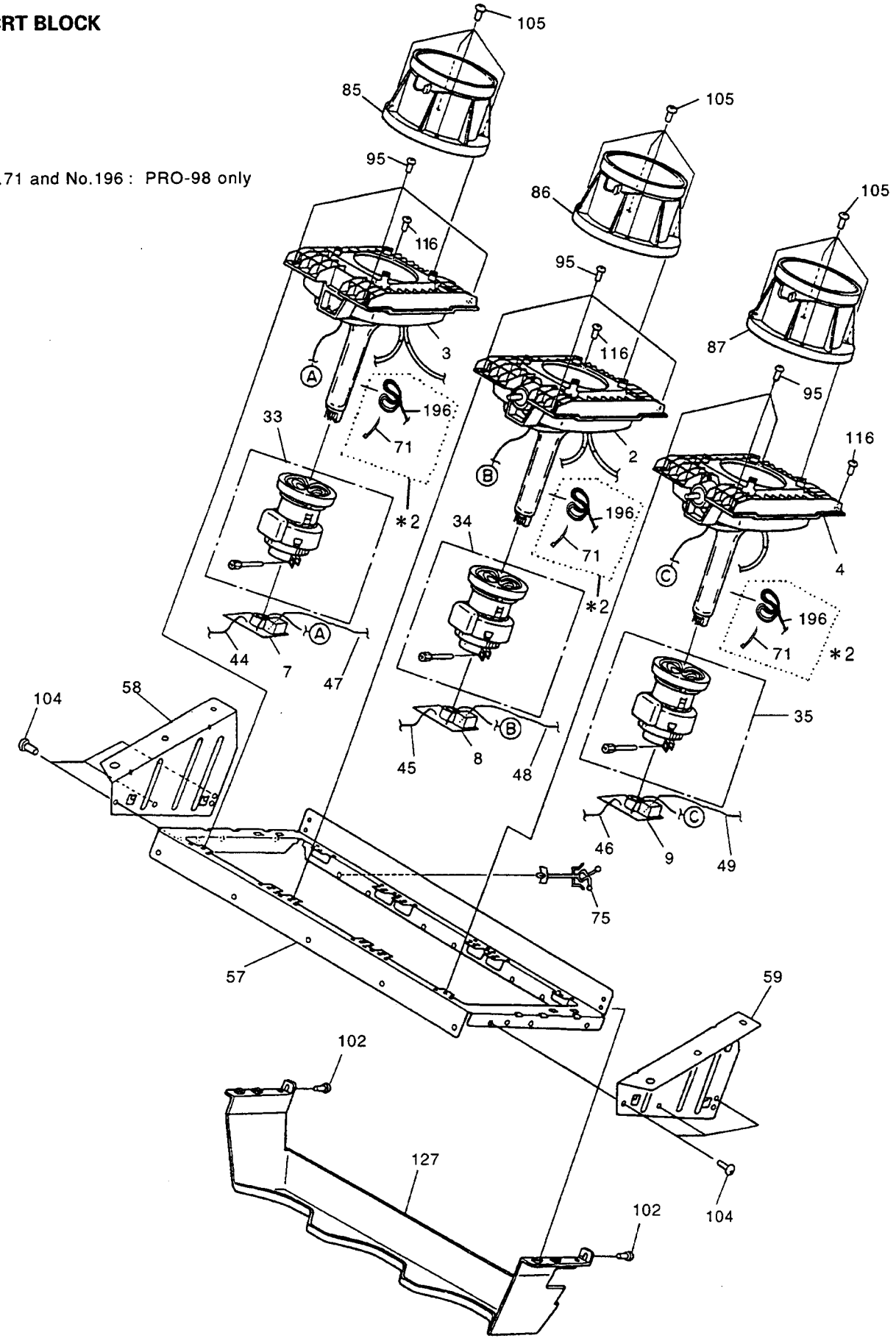

145
97
CRT Block
(Refer to (5) CRT BLOCK.)
113
97
118
112
113
113
112
113
79
141
81
91
80
142
93
93
114
25
202
83
108
83
108
PRO-98
only
94
113
94
103
94
74
113
113
144
114
114
Chassis Block
(Refer to (4) CHASSIS BLOCK.)

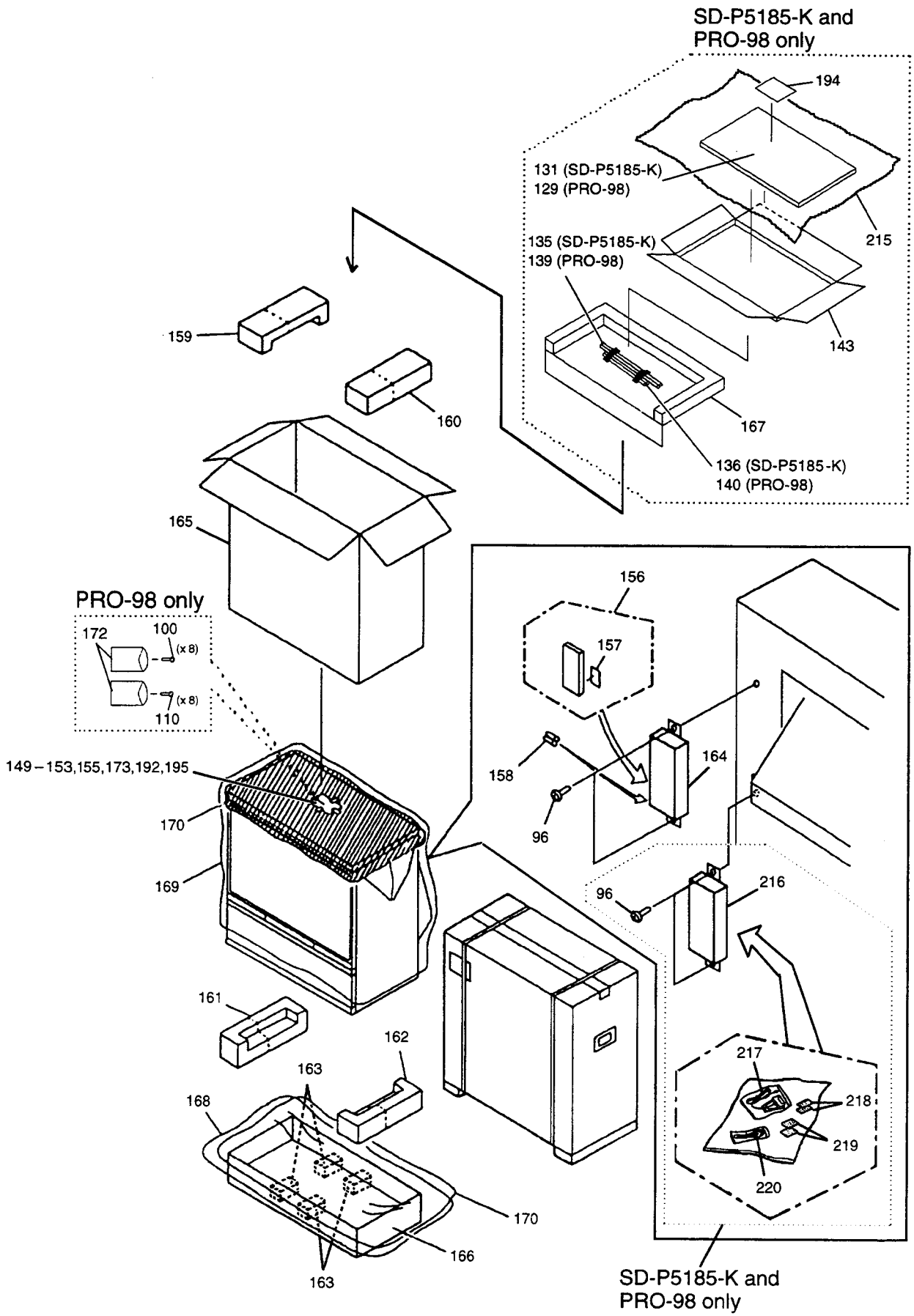
(4) CHASSIS BLOCK



(5) CRT BLOCK

*2:
No.71 and No.196 : PRO-98 only




SD-P5185-K and
PRO-98 only
194
131 (SD-P5185-K)
129 (PRO-98)
215
135 (SD-P5185-K)
139 (PRO-98)
143
167
136 (SD-P5185-K)
140 (PRO-98)
159
160
165
PRO-98 only
172
100
(x 8)
(x 8)
110
149–153,155,173,192,195
170
169
156
157
158
164
96
96
216
161
162
163
168
170
166
163
217
218
219
220
SD-P5185-K and
PRO-98 only

5. REMOTE CONTROL UNIT

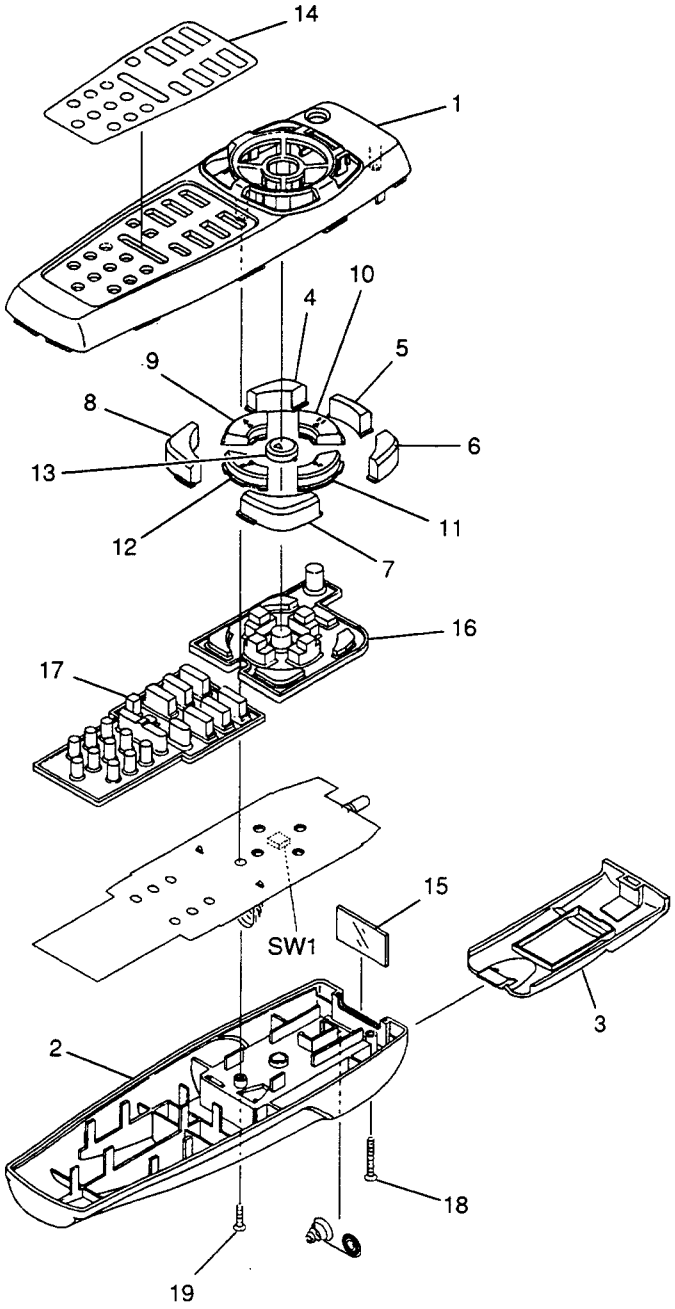
NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The " ⚠ " mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ◉ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

REMOTE CONTROL UNIT 〔AXD1415 (CU-SD092)〕
(For SD-P5185-K and PRO-98)

Exploded View and Parts List

Mark	No.	Description	Parts No.
	1	Case A	AZN2305
	2	Case B	AZN7189
	3	Battery cover	AZN7187
	4	Main key (POWER)	AZN7190
	5	Main key (MENU)	AZN2306
	6	Main key (CHECK)	AZN7192
	7	Main key (+)	AZN7193
	8	Main key (−)	AZN7194
	9	Main key (REW)	AZN7195
	10	Main key (PAUSE)	AZN2307
	11	Main key (FF)	AZN7197
	12	Main key (STOP)	AZN2308
	13	Main key (PLAY)	AZN2309
	14	Name plate	AZA2016
	15	Filter	AZA7101
	16	Rubber sheet A	AZA7102
	17	Rubber sheet B	AZA2017
	18	Screw	AZB7022
	19	Screw	AZB7023



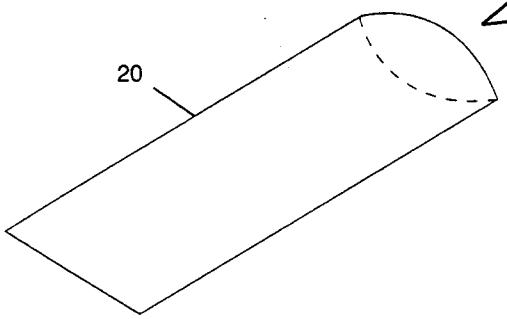
Parts List of Semiconductors and Switches

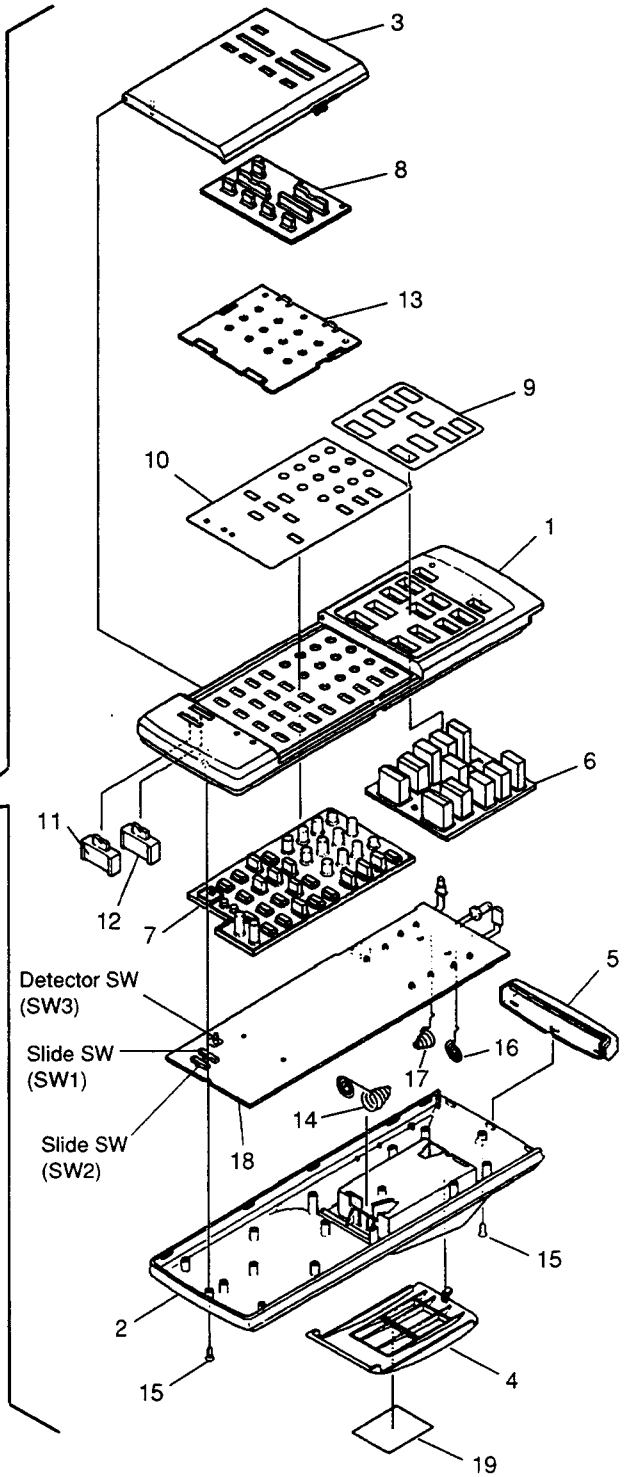
Mark	No.	Description	Parts No.
	IC1	UPD17215GT-544	AZC7073
	Q1		MSB709-RT2
	Q2		2SD1664
	D1		M1MA151WKT2
	D2	LED	DNP318U
	D3 - D12	LED	LBR2272S
	X1	Resonater	PBRC4.50AR
	SW1	SW	AZS1118

REMOTE CONTROL UNIT 〔AXD1416 (CU-SD091)〕
(For SD-P5183-K and SD-P4683-K)

Exploded View and Parts List

Mark	No.	Description	Parts No.
	1	Case A	AZA2008
	2	Case B	AZA1431
	3	Door	AZA2009
	4	Battery cover	AZA1505
	5	Filter	AZA1387
	6	Rubber sheet A	AZA2010
	7	Rubber sheet B	AZA2011
	8	Rubber sheet C	AZA2012
	9	Name plate A	AZA2013
	10	Name plate B	AZA2014
	11	Knob A	AZA1393
	12	Knob B	AZA1394
	13	Spacer	AZA1396
	14	Spring	AZB1268
	15	Screw	AZB1368
	16	Spring (+)	AZB1366
	17	Spring (−)	AZB1367
NSP	18	P.W.B	AZN2188
	19	Remote unit label	AZA2007
	20	Vinyl bag	AZE1091



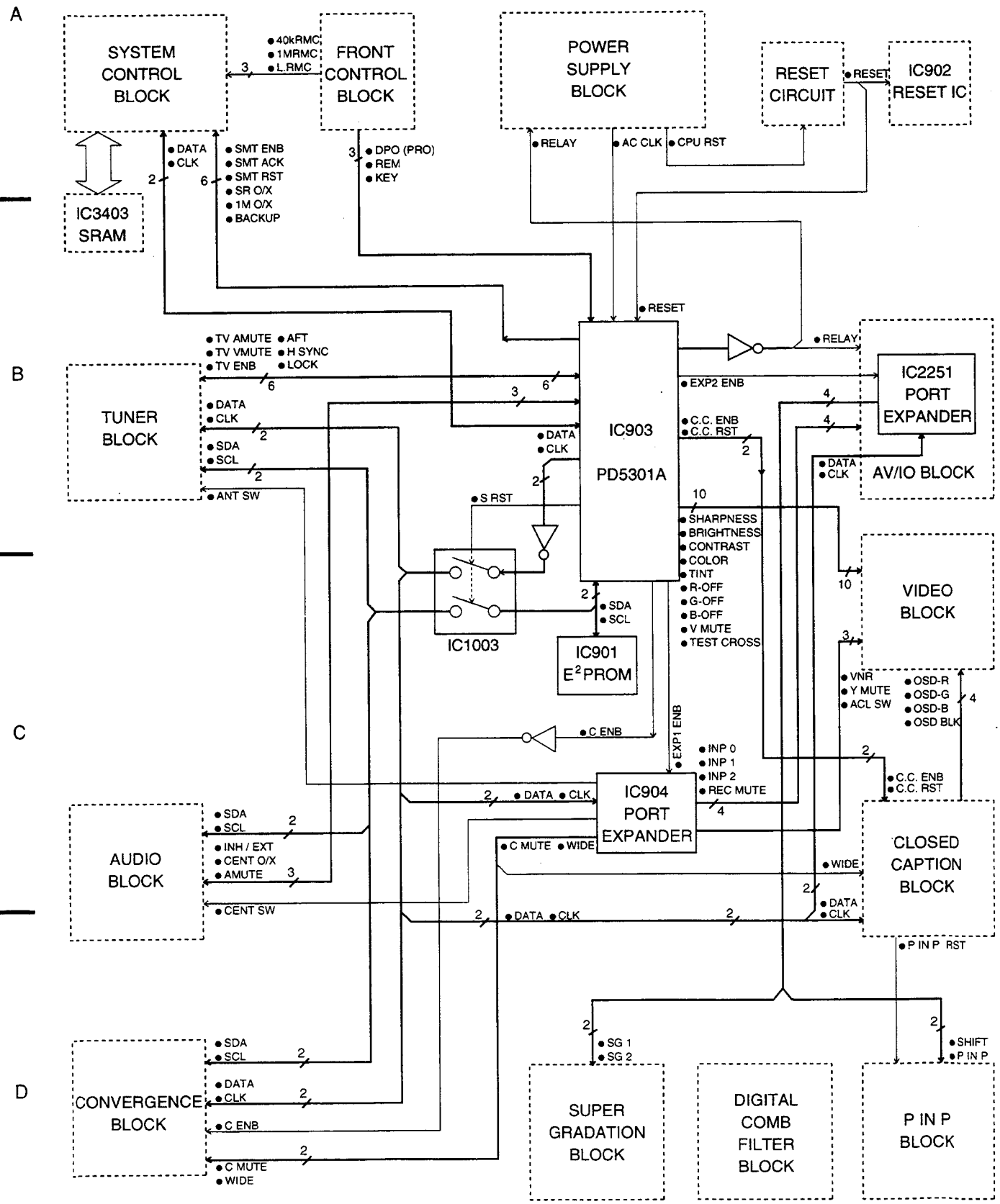


Parts List of Semiconductors and Switches

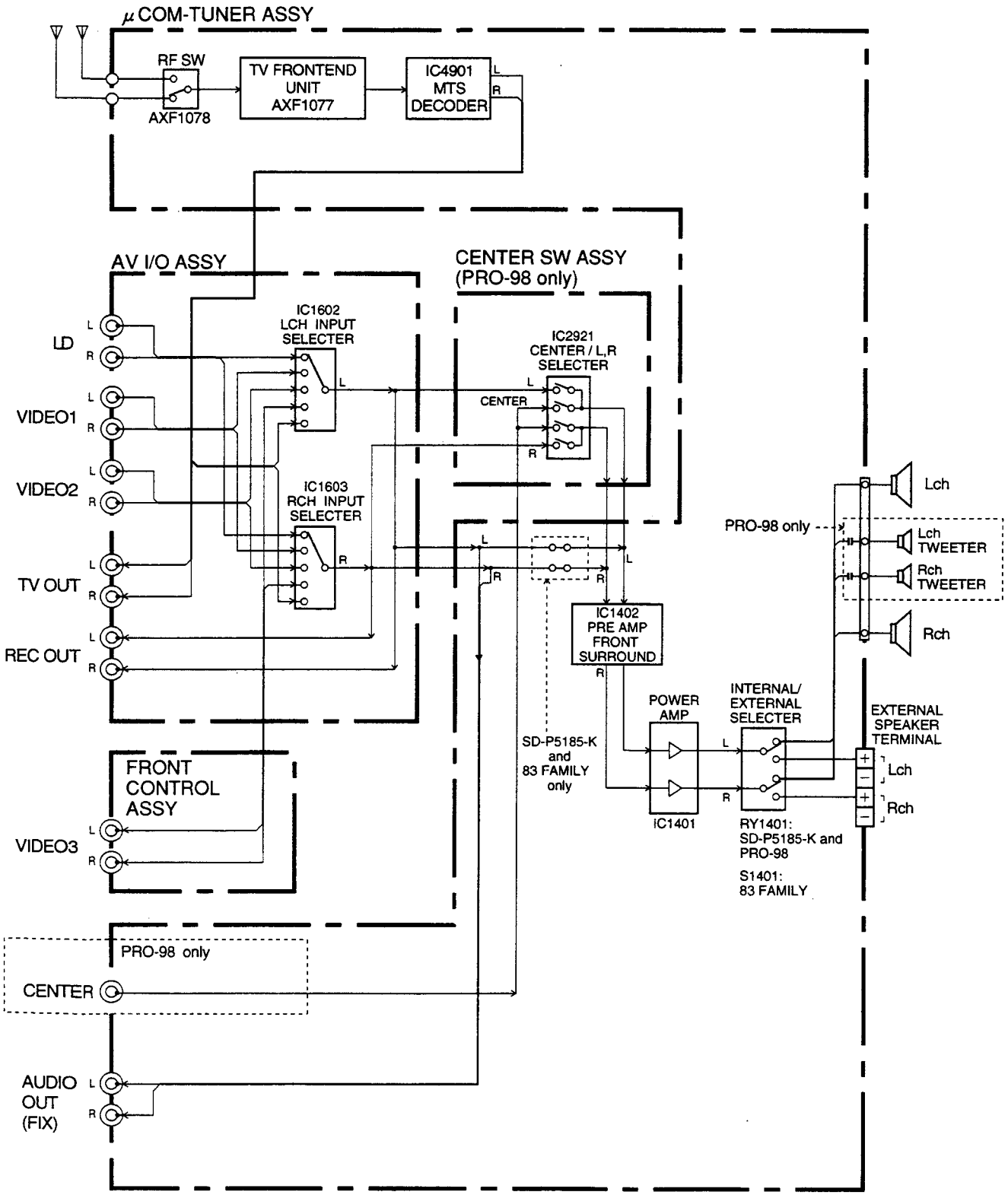
Mark	No.	Description	Parts No.
	IC1	UPD17204GC-544-3BH	AZQ1054
	Q1, Q2		2SD1664
	Q3	Voltage detector	AZC1582
	D1	LED	SE303A-C
	D2	Photo-diode	SPS-503C-3
	D3	LED	AZC1224
	D4 - D6		RLS73
	Z1	Resonater (4MHz)	AZC1846
	SW1	Slide SW	AZS1074
	SW2	Slide SW	AZS1073
	SW3	Detector SW	AZS1123

6. BLOCK DIAGRAM

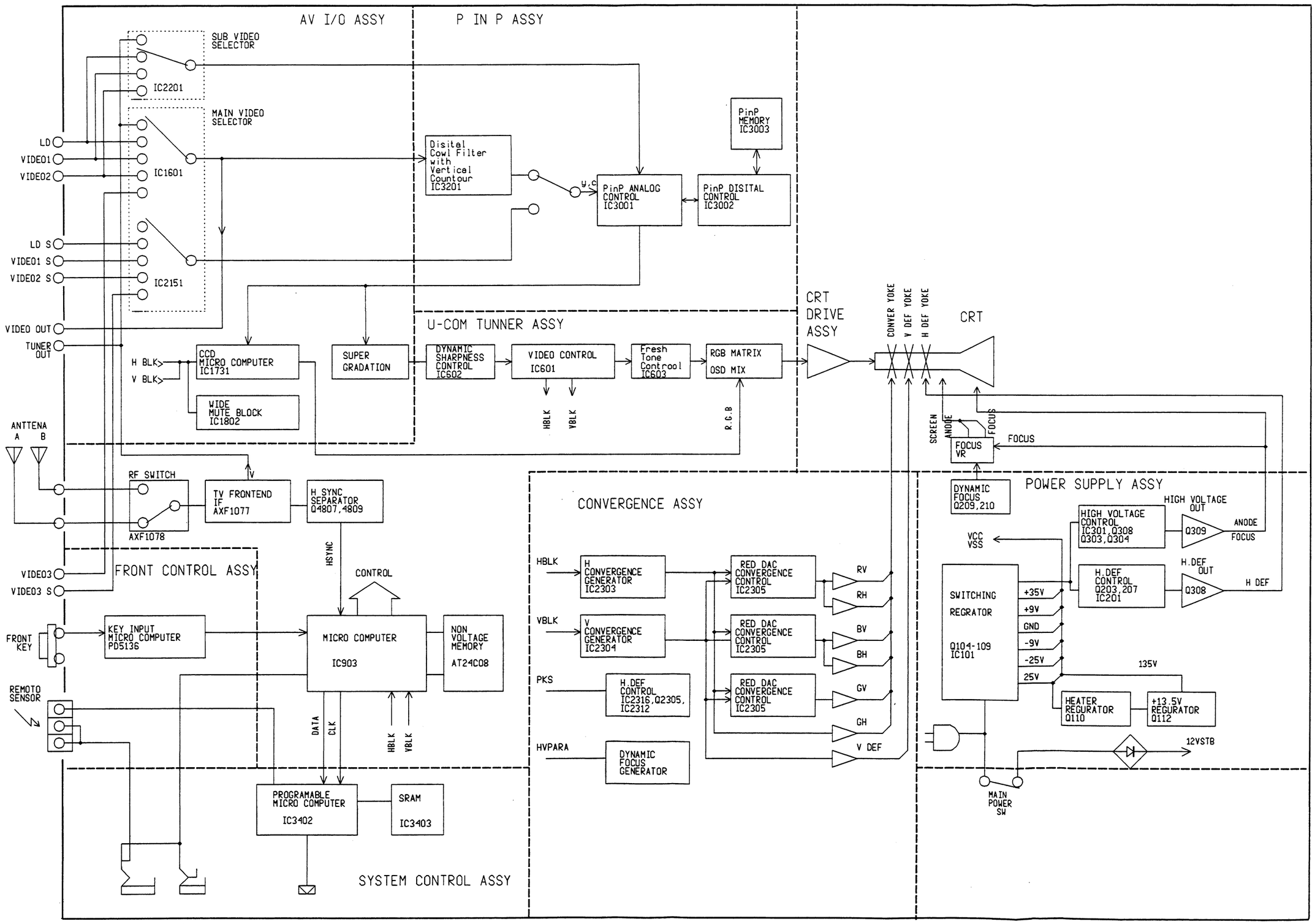
6.1 U-COM BLOCK



6.2 AUDIO BLOCK

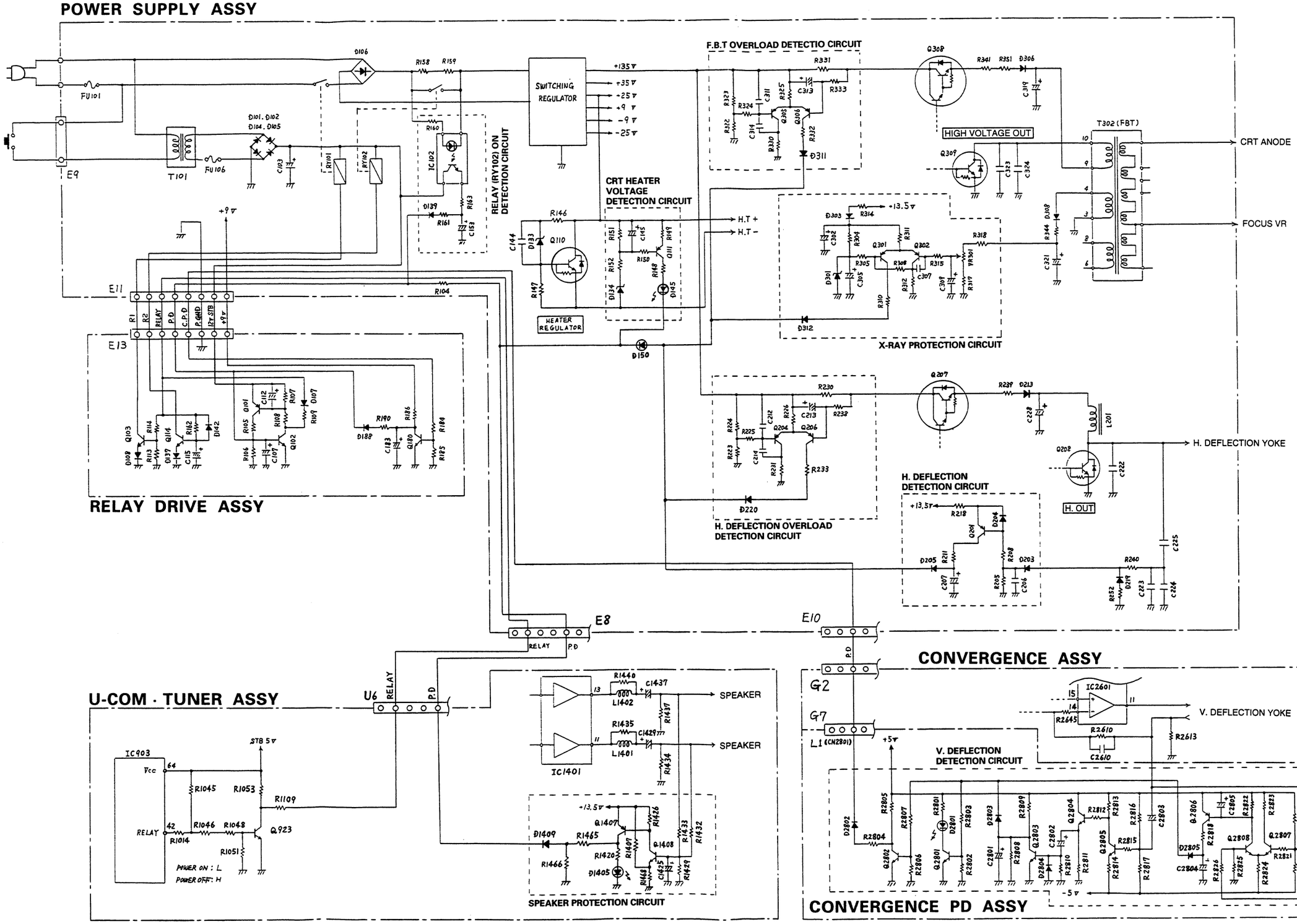


6.3 VIDEO BLOCK DIAGRAM



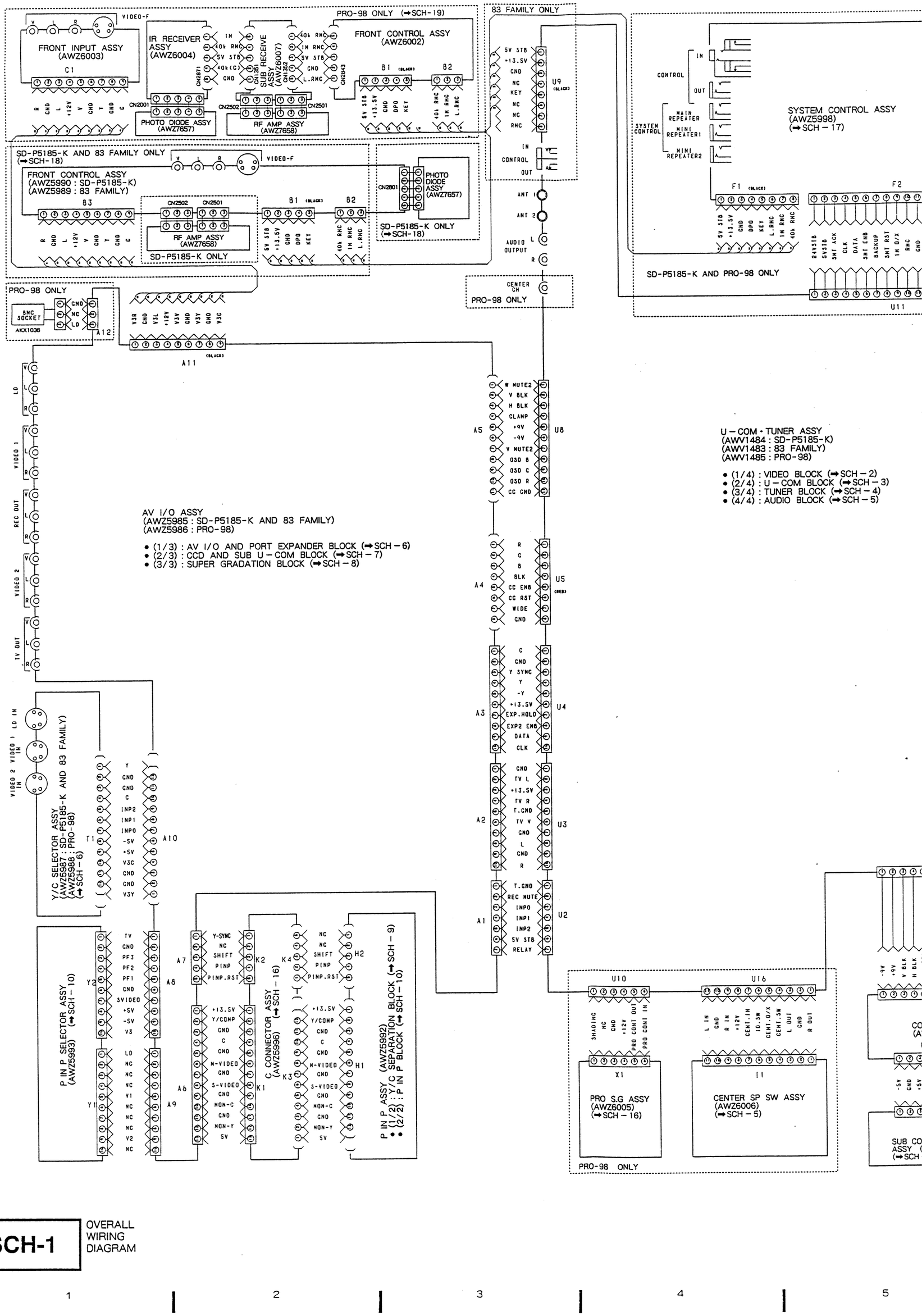
6.4 PROTECTION BLOCK DIAGRAM

POWER SUPPLY ASSY



7. SCHEMATIC AND PCB CONNECTION DIAGRAMS

7.1 OVERALL WIRING DIAGRAM



SCH-1 OVERALL WIRING DIAGRAM

SCH – 1

STEM CONTROL ASSY
VZ5998)
SCH – 17)

F2

24V STB
5V STB
SMT ACK
CLK
DATA
SMT END
BACKUP
SMT RST
1M O/X
RMC
GND
GND
+13.5V
DPO
KEY
3R O/X

U11

PRO-98 ONLY

U13 LG L RG R — W1 EXT. SP ASSY (AWZ6008) (➡SCH – 5) — L R EXT. SP

U12 LT LG LC L RT RG RC R — L R

SD-P5185-K AND 83 FAMILY ONLY

EXT. SP L R — LG L RG R — L R

R., G., B. CRT DRIVE ASSEMBLIES (➡SCH – 15)

R CRT DRIVE Ass'y (AWZ5982) (RED) — R GND +9V — M1 M2
G CRT DRIVE Ass'y (AWZ5983) — G GND +9V — M1 N2 N3
B CRT DRIVE Ass'y (AWZ6009) (BLACK) — B GND +9V — P1 P2 P3

△VR1 FOCUS VR ACX1096
FOCUS PACK — SCREEN SCREEN SCREEN FOCUS FOCUS FOCUS

FOCUS GND D.F. — J106 E6
+220V HT+ HT- GND ANODE — E5 (RED) J104 J103

U14 (RED) +9V GND R +9V GND G +9V GND B

U1 +39V H BLK H DRV ABL GND GND +13.5V +13.5V

U6 +35V A GND AC CLK 24V STB 12V STB P.GND P.D. RELAY -9V +9V CPU RST

U7

CN2904 ABL +13.5V +13.5V GND GND CPU RST H DRV +39V H BLK
CN2903 -9V +9V RELAY P.GND P.D. +35V +35V 12V STB AC CLK 24V STB A GND
CN2893 ABL H DRV H BLK +13.5V +13.5V GND GND -9V +9V +39V
CN2894 CPU RST RELAY HT(C) HT(E) P.D. +35V A GND AC CLK 24V STB 12V STB P.GND

B CONNECTOR ASSY (AWZ5995) (➡SCH – 16)
A CONNECTOR ASSY (AWZ5994) (➡SCH – 16)

E6 E7 E8

AC POWER CORD ADG1058
LIVE △ NEUTRAL — AC 120V 60Hz

POWER SW ASSY (AWZ5984) (➡SCH – 12) — E9 L1 L2 Z1

E11 R.1 R.2 RELAY P.D. C.P.D P.GND 12V STB +9V — RELAY DRIVE ASSY (AWZ5999) (➡SCH – 15) — E13

☆POWER SUPPLY ASSY
(AWV1499 : SD-P5185-K AND 83 FAMILY)
(AWV1500 : PRO-98)

- (1/3) : SW POWER SUPPLY BLOCK (➡SCH – 12)
- (2/3) : H. DEFLECTION BLOCK (➡SCH – 13)
- (3/3) : HIGH VOLTAGE BLOCK (➡SCH – 14)

PRO-98 ONLY
+13.5V +13.5V +13.5V — E13

U7 (RED) +13.5V +13.5V +13.5V GND Y +13.5V N.C

VM ASSY (AWZ5997) (➡SCH – 15)
V3 (C) G2 NC C1
V4 (RED) R2 NC R1 (B)

E10 NC NC -25V GND NC +25V C.P.D. P.K.S. HV PARA

E1 (B) E2 (C) E3 (B)

U15 (BLACK) -9V +9V V BLK H BLK W MUTE2 SHADING WIDE CLK C MUTE DATA C ENB SCL SDA

G1 — VR VD SHD SHR SVD SVR — G3 (RED) — G4 (C) — G5 (BLACK)

VM COIL ATL1121

CONVERGENCE ASSY (AWZ5981) (➡SCH – 11)
G6 -5V GND +5V H2+V2 H2 V2
G7 VR +5V GND CPD -5V
G8 CLK C MUTE DATA C ENB SCL SDA GND +5V
G2 HV PARA P.K.3 C.P.D +25V GND -25V

D1 SUB CONVERGENCE ASSY (AWZ6001) (➡SCH – 11)

L1 CONVERGENCE PD ASSY (AWZ5991) (➡SCH – 11)

L1 L2 L3 — R G B — D.Y C.Y

ASSY
185-K)
MILY)
8)

LOCK (➡SCH – 2)
BLOCK (➡SCH – 3)
LOCK (➡SCH – 4)
LOCK (➡SCH – 5)

NOTE FOR SCHEMATIC DIAGRAMS (Type 5A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
3. **RESISTORS:**
   Unit: kΩ, MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance:(F):±1%, (G):±2%, (K):±10%, (M):±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: pF or μF unless otherwise noted.
   Ratings: capacitor (μF) /voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ▭ or —V:
   DC voltage (V) at no input signal unless otherwise noted.
   Value in ( ) is DC voltage at color bar signal input state.
   ⇨mA or ←mA:
   DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ⊘ or ⊘ : Adjusting point.
   - ◁ : Measurement point.
   - The △ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
   - Parts marked by ☆ are important parts which relate to X-rays radiation. If any of these parts needs to be replaced, always replace with specified parts.
   - Parts marked by ✕ are important parts which relate to X-rays radiation. If a failure occurs in any of these parts, replace the printed circuit board assembly where the relevant part has already been adjusted as a working component. Do not replace the actual part itself. If any part marked by ✕ is replaced, there is danger of being exposed to X-rays.
8. **SCH – □ ON THE SCHEMATIC DIAGRAM:**
   - SCH – □ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):
   POWER SW ASSY
   S3591: MAIN POWER

   FRONT CONTROL ASSY (SD-P5185-K AND 83 FAMILY)
   S4101 : CHANNEL –
   S4102 : INPUT SELECTOR
   S4103 : POWER
   S4104 : VOLUME +
   S4105 : VOLUME –
   S4106 : CHANNEL +
   S4107 : FACTORY ADJ
   S4108 : RETURN
   S4109 : CINEMA WIDE
   S4110 : P INP ON'OFF
   S4111 : P IN P INPUT
   S4112 : ANT

   FRONT CONTROL ASSY (PRO-98)
   S2841 : CHANNEL –
   S2842 : INPUT SELECTOR
   S2843 : POWER
   S2844 : VOLUME –
   S2845 : VOLUME –
   S2846 : CHANNEL –
   S2847 : FACTORY ADJ
   S2848 : RETURN
   S2849 : WIDE
   S2850 : P INP ON'OFF
   S2851 : P IN P INPUT
   S2852 : ANTENNA SELECTOR

OVERALL WIRING DIAGRAM — **SCH-1**

7.2 U-COM • TUNER ASSY (1/4)

Note : Relation between symbols and parts numbers are as follows unless otherwise noted.

U-COM • TUNER ASSY (AWV1484 : SD-P5185-K)
• VIDEO BLOCK (AWV1483 : 83 FAMILY)
(AWV1485 : PRO-98)

SCH-2

U-COM • TUNER ASSY (1/4)

(P) : P IN P Y-signal route
(P) : P IN P C-signal route
(H) : H. Deflection signal route
: R-Y Signal route
: G-Y Signal route
: B-Y Signal route
(R) : R. Signal route
(G) : G. Signal route
(B) : B. Signal route

PRO S.G ASSY
X1 (➡SCH – 16)
SHADING
NC
GND
+12V
PRO CONT. OUT
PRO CONT. IN
PRO-98 ONLY
U10

(P5185-K)
FAMILY)
-98)

+12V
TP-47 R
Q667 : R-Y INVERTER
Q649,658 : BUFFER
Q682 : OSD BLK INVERTER
Q675 : OSD-R INVERTER
Q662 : R MUTE
Q670 : R-Y BUFFER
Q654 : R – Y CLAMP
TP-47 G
Q666 : G-Y INVERTER
TP-41 C
Q647, 657 : BUFFER
Q683 : OSD BLK INVERTER
Q674 : OSD-G INVERTER
TP-05 Y (SC)
Q661 : G MUTE
U14
R. CRT DRIVE ASSY M1 (➡SCH – 15)
G. CRT DRIVE ASSY N1 (➡SCH – 15)
B. CRT DRIVE ASSY P1 (➡SCH – 15)
Q669 : G-Y BUFFER
TP-47 B
Q653 : G-Y CLAMP
Q645,656 : BUFFER
Q684 : OSD BLK INVERTER
Q665 : B-Y INVERTER
Q673 : OSD-B INVERTER
Q681 : BLUE TAILING LIMITER
VIDEO CHROMA AND DEFLECTION SIGNAL PROCESSOR
Q652 : B-Y CLAMP
Q660 : B MUTE
Q668 : B-Y INVERTER
TP-13 -Y
IC603 : FRESH TONE CORRECTION
Q633 : H. BLK BUFFER
Q634,635 : V MUTE SW.
Q636 : V MUTE INVERTER
Q685 : BUFFER
Q650,651 : CROSS TEST SIGNAL INVERTER
Q655,659 : BUFFER
LINEAR WHITE CIRCUIT

GND
GND
+13.5V
+13.5V
ECTOR ASSY
H – 16)

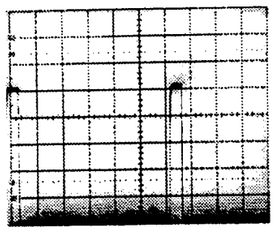
U-COM · TUNER ASSY (1/4)

SCH-2

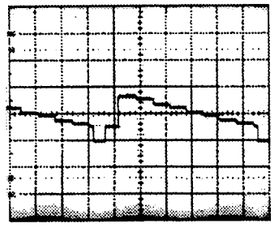
• Waveformes at U-COM・TUNER ASSY (VIDEO BLOCK)

- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

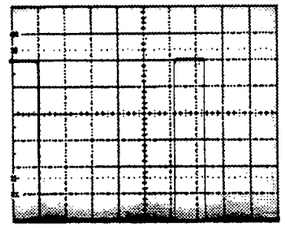
(1) Q605 Collector
V range : 1V/div.
H range : 10 μsec/div.



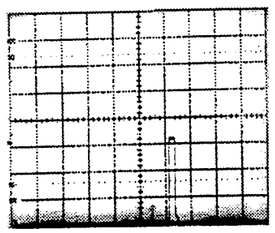
(4) Q629 Emitter
V range : 1V/div.
H range : 10 μsec/div.



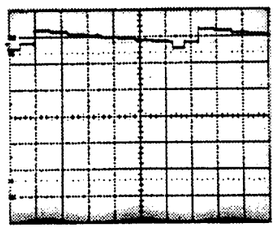
(7) Q633 Emitter
V range : 2V/div.
H range : 10 μsec/div.



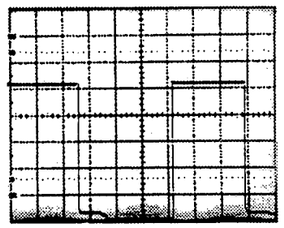
(2) U8 pin 4 (CLAMP)
V range : 0.5V/div.
H range : 10 μsec/div.



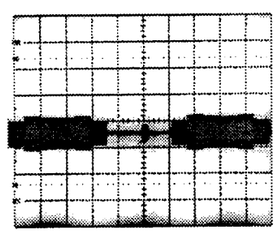
(5) TP-05 (Y)
V range : 1V/div.
H range : 10 μsec/div.



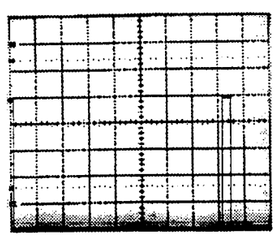
(8) IC601 pin 7
V range : 1V/div.
H range : 10 μsec/div.



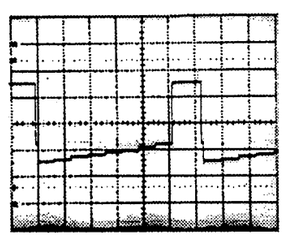
(3) TP-41 (C)
V range : 0.2V/div.
H range : 10 μsec/div.



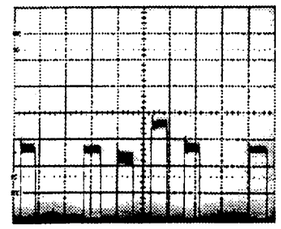
(6) Q630 Emitter
V range : 2V/div.
H range : 2msec/div.



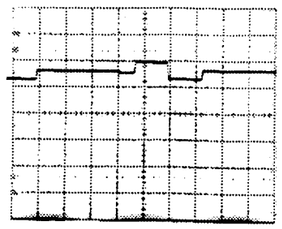
(9) TP-13 (-Y)
V range : 2V/div.
H range : 10 μsec/div.



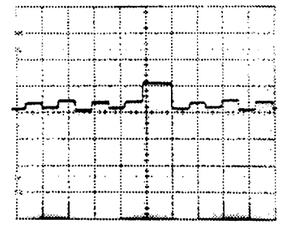
(10) Q680 Emitter
V range : 50mV/div.
H range : 10 μsec/div.



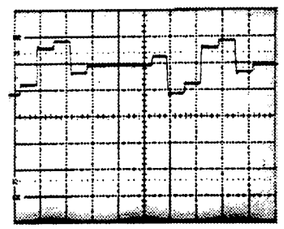
(13) Q657 Emitter
V range : 1V/div.
H range : 10 μsec/div.



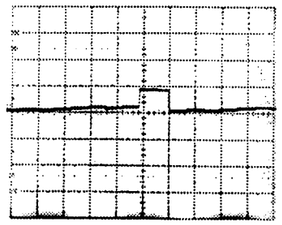
(16) TP-47 B
V range : 2V/div.
H range : 10 μsec/div.



(11) Q658 Emitter
V range : 1V/div.
H range : 10 μsec/div.



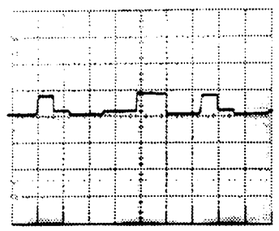
(14) TP-47 G
V range : 2V/div.
H range : 10 μsec/div.



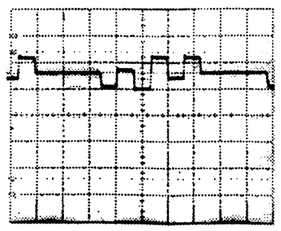
(17)

Note :
No. (17) waveform is indicated in SCH-15.

(12) TP-47 R
V range : 2V/div.
H range : 10 μsec/div.



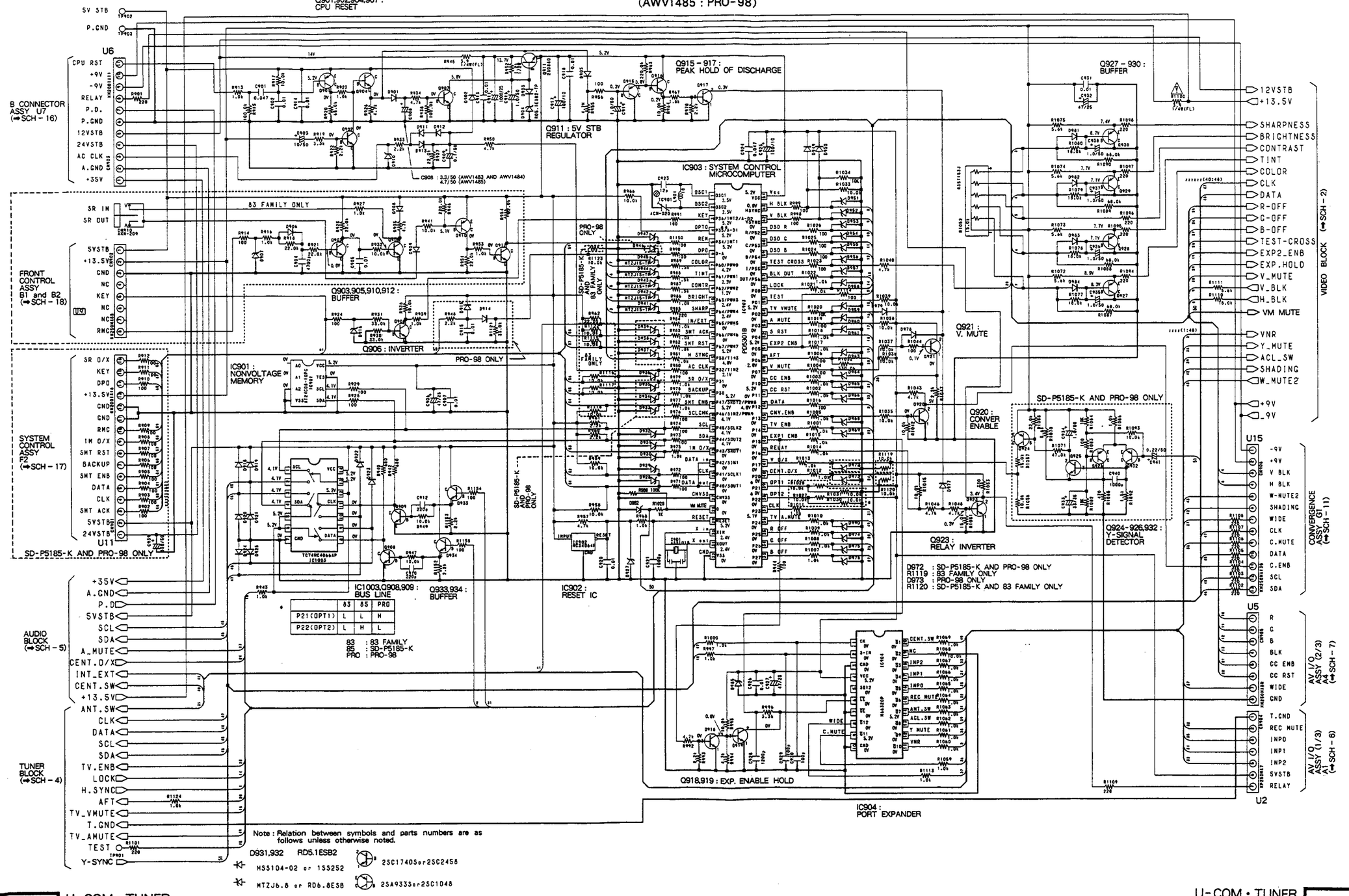
(15) Q656 Emitter
V range : 1V/div.
H range : 10 μsec/div.



7.3 U-COM • TUNER ASSY (2/4)

U-COM • TUNER ASSY (AWV1484 : SD-P5185-K)
● U-COM BLOCK (AWV1483 : 83 FAMILY)
(AWV1485 : PRO-98)

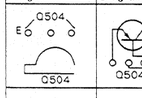
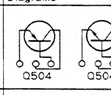
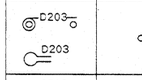
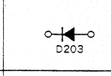
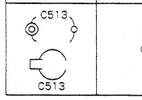
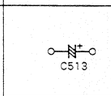
SCH – 3



	83	85	PRO
P21(OPT1)	L	L	H
P22(OPT2)	L	H	L

NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Diode
		Capacitor (Polarized)

3. The transistor terminal marked with E or ⊏ shows the emitter.
4. The diode terminal marked with ◎ or ⊂ shows cathode side.
5. The capacitor terminal marked with ◎ or ⊏ shows negative terminal.
6. The parts mounted on these PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.

● This diagram is viewed from the mounted parts side.

U-COM · TUNER ASSY

Q4801 Q4806
Q4802 Q4804 Q4812
Q4809 Q4807 Q4904
IC4901 Q4903
Q4811 Q4813
Q4803 Q4814 VR4801
Q4808 Q4810
Q4901 Q4902
Q912
Q910
Q924 Q932
Q903 Q905
Q926 Q925
IC904
Q1413
Q1415 Q918 Q919
Q1412
IC1402 Q921
Q906
Q1410
Q1411
Q1417
Q1409 Q920
Q1404 Q908
Q1406 Q934
IC903
Q1416 Q923
IC1401
Q1407
Q1408 Q933
Q1414
Q909 IC902
Q917
Q915
IC1003 Q927 Q916
Q930
Q1402
IC901
Q1401 Q902 Q904
Q911
Q901 Q907

AV I/O ASSY
A1. A2. A3.
A4. A5

SYSTEM CONTROL ASSY F2

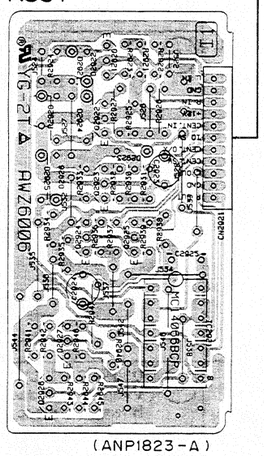
INT. SPEAKERS

FRONT CONT ASSY B1. E

CONVERGENCE ASSY G1

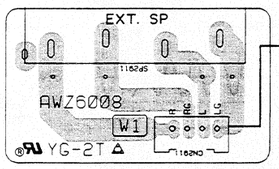
CENTER SP SW ASSY

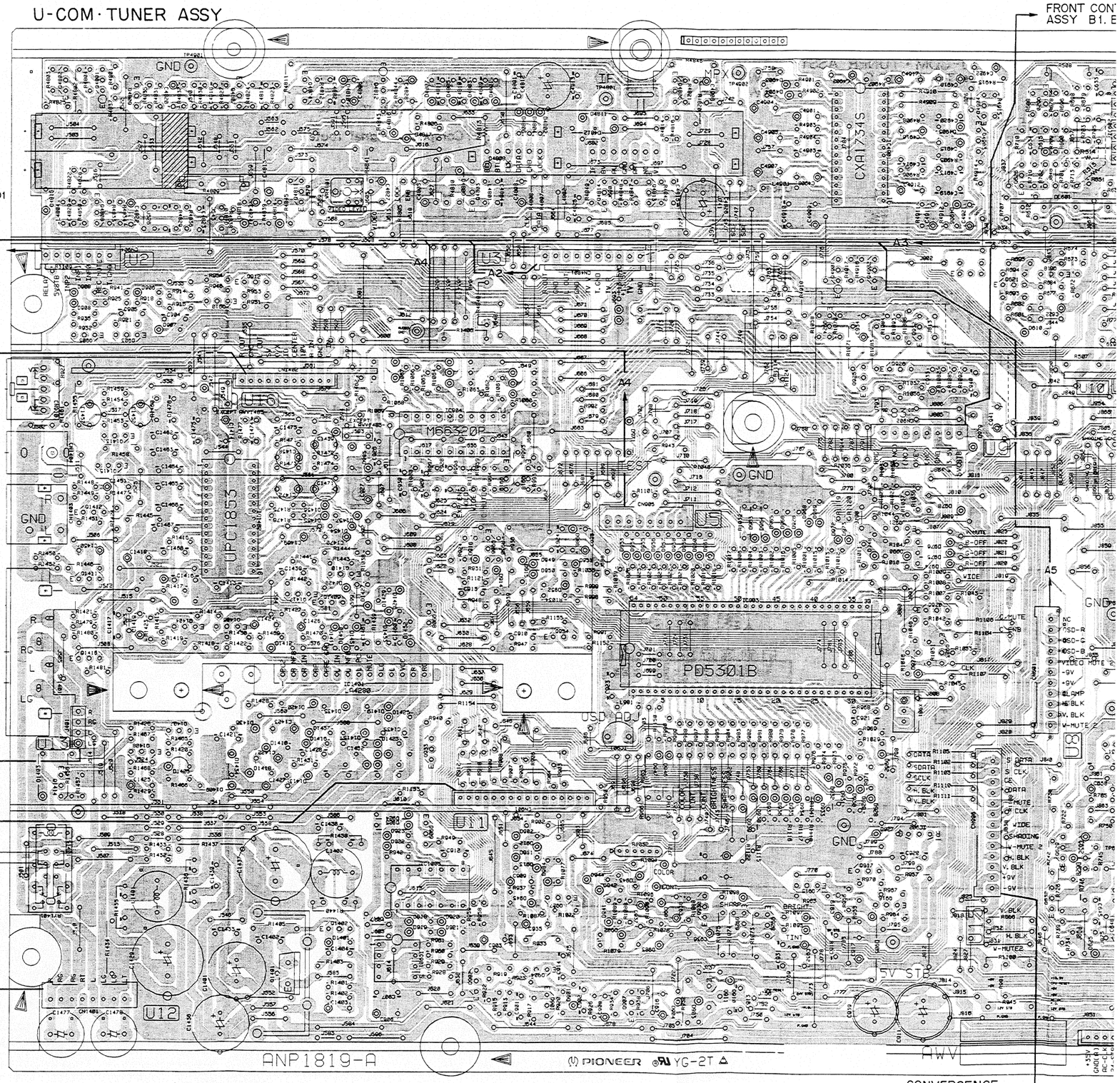
Q2921
Q2922
Q2923
Q2924
Q2925
IC2921
Q2927
Q2926



(ANP1823-A)

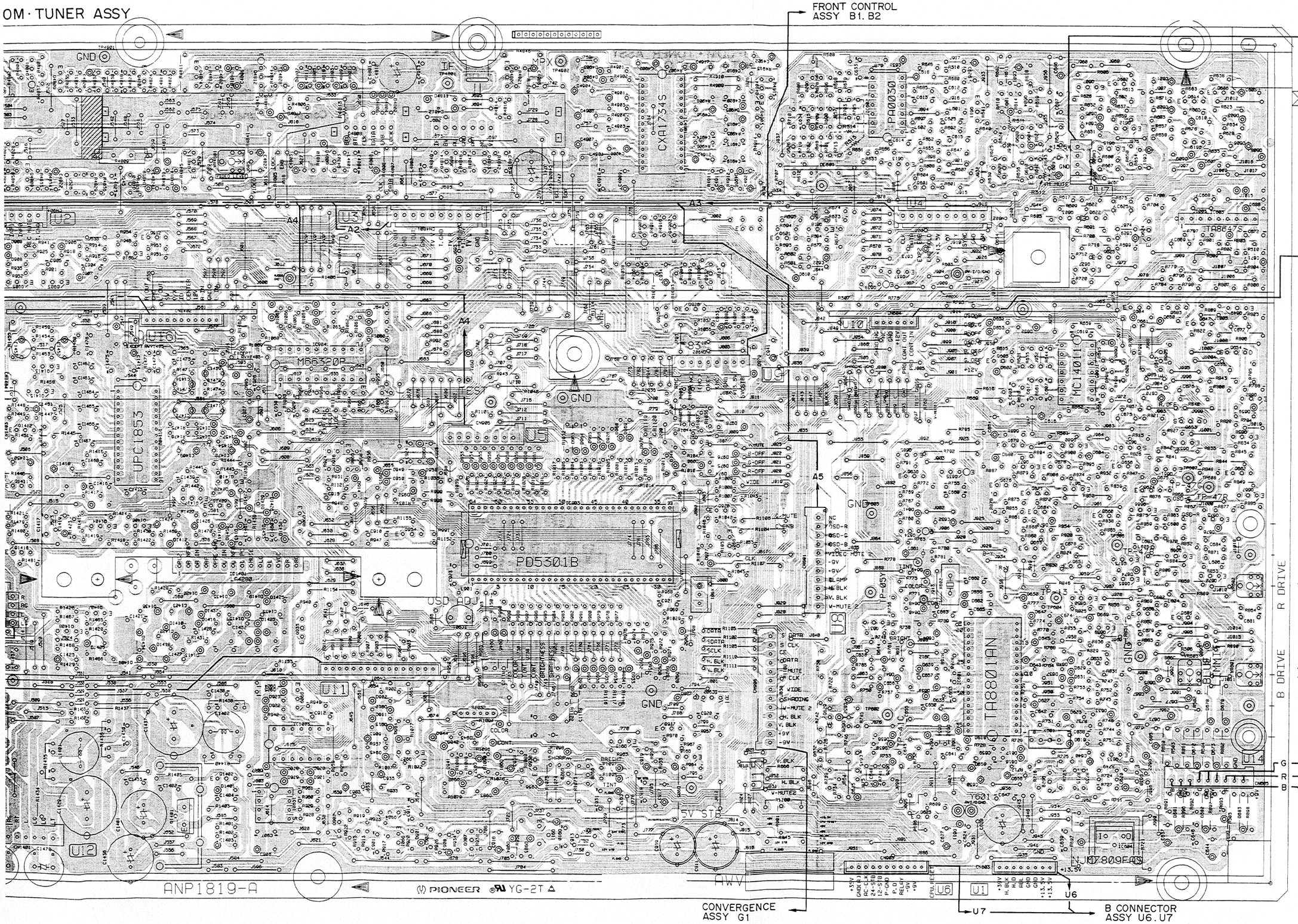
EXT. SP ASSY





OM · TUNER ASSY

PCB – 1

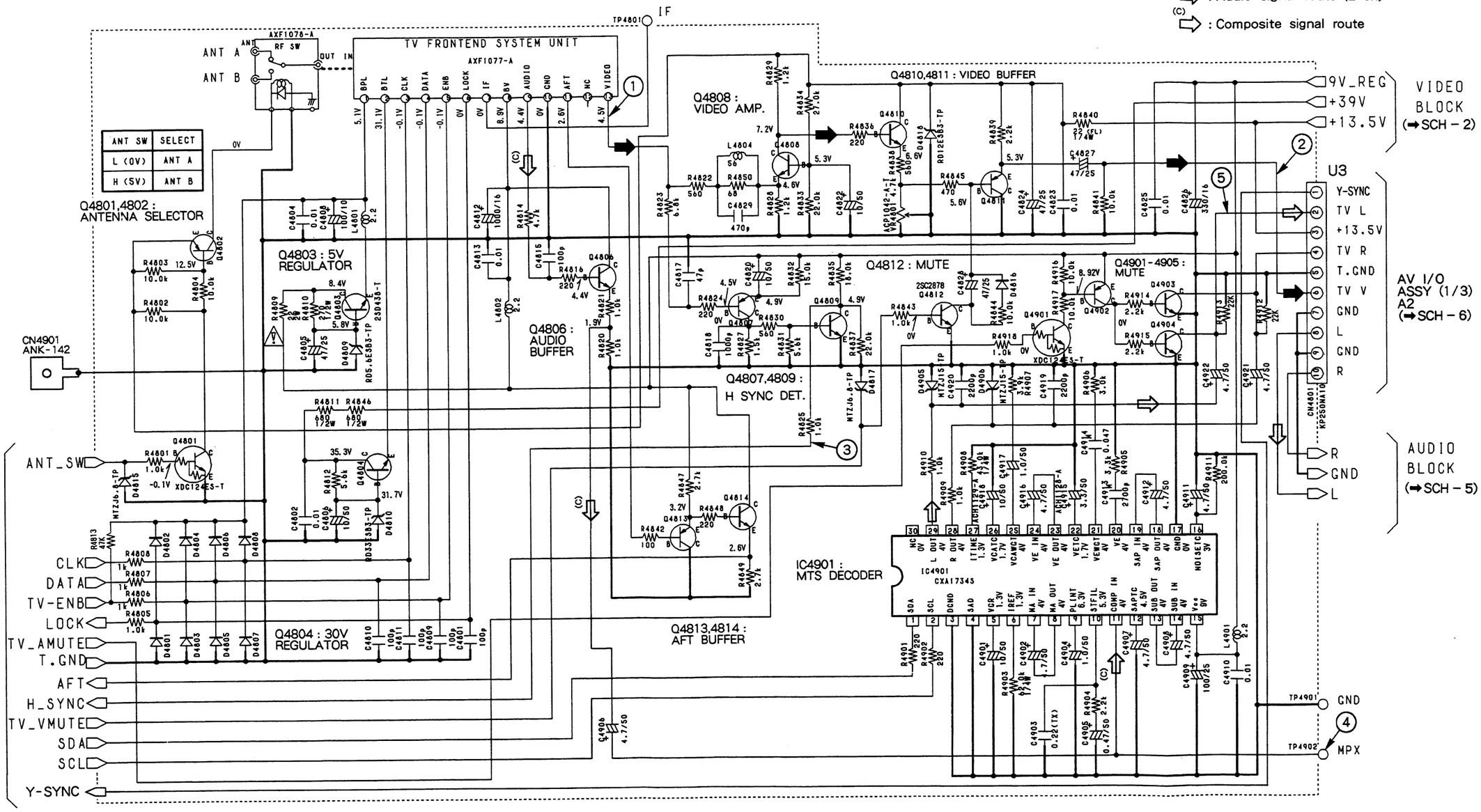


7.4 U-COM • TUNER ASSY (3/4)

SCH – 4

U-COM • TUNER ASSY (AWV1484 : SD-P5185-K)
• TUNER BLOCK (AWV1483 : 83 FAMILY)
(AWV1485 : PRO-98)

: Video signal route
: Audio signal route (L ch)
(C) : Composite signal route



• Measuring condition of DC voltage
• ANTENNA SELECT : ANTNA A
• Video signal : NTSC color bar signal, 87.5% modulation
• Audio signal : 1kHz sine wave, frequency deviation ± 25kHz
Monaural signal

2SA933S
2SC1740S
HSS-104-02

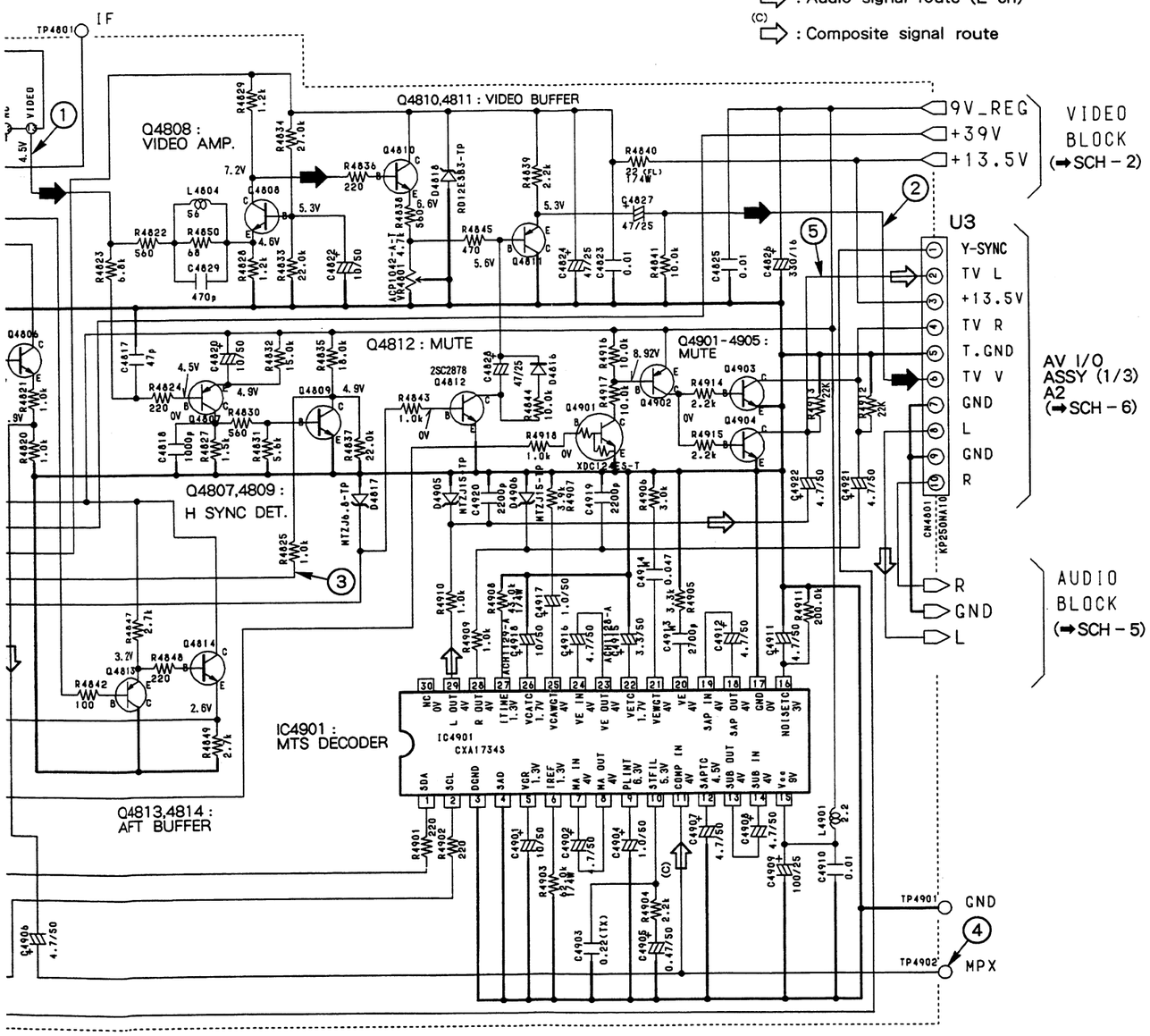
Note : Relation between symbols and parts numbers are as follows unless otherwise noted.

SCH-4 U-COM • TUNER ASSY (3/4)

SCH – 4

U-COM • TUNER ASSY (AWV1484 : SD-P5185-K)
• TUNER BLOCK (AWV1483 : 83 FAMILY)
(AWV1485 : PRO-98)

: Video signal route
: Audio signal route (L ch)
(C) : Composite signal route



Note : Relation between symbols and parts numbers are as follows unless otherwise noted.

2SA933S

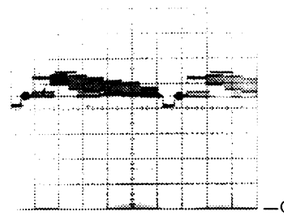
2SC1740S

MS-104-02

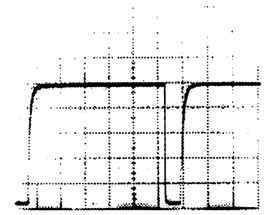
• Waveformes at U-COM • TUNER ASSY (TUNER BLOCK)

- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

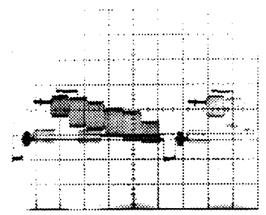
① – 1 TV front-end Pin 13 (VIDEO)
V range : 1V/div.
H range : 10 μsec/div.



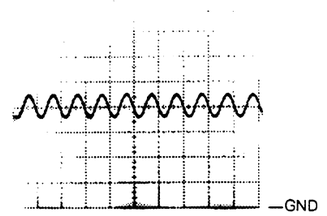
③ Lead wire of R4825
V range : 1V/div.
H range : 10 μsec/div.



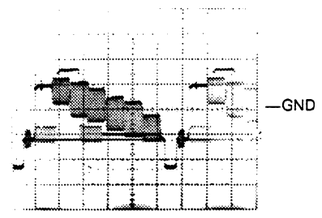
① – 2 TV front-end Pin 13 (VIDEO)
V range : 0.5V/div.
H range : 10 μsec/div.
(AC range)



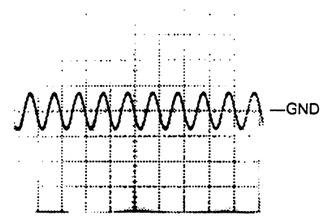
④ TP4902 (MPX)
V range : 1V/div.
H range : 1msec/div.



② U3 Pin 6 (TV V)
V range : 0.5V/div.
H range : 10 μsec/div.



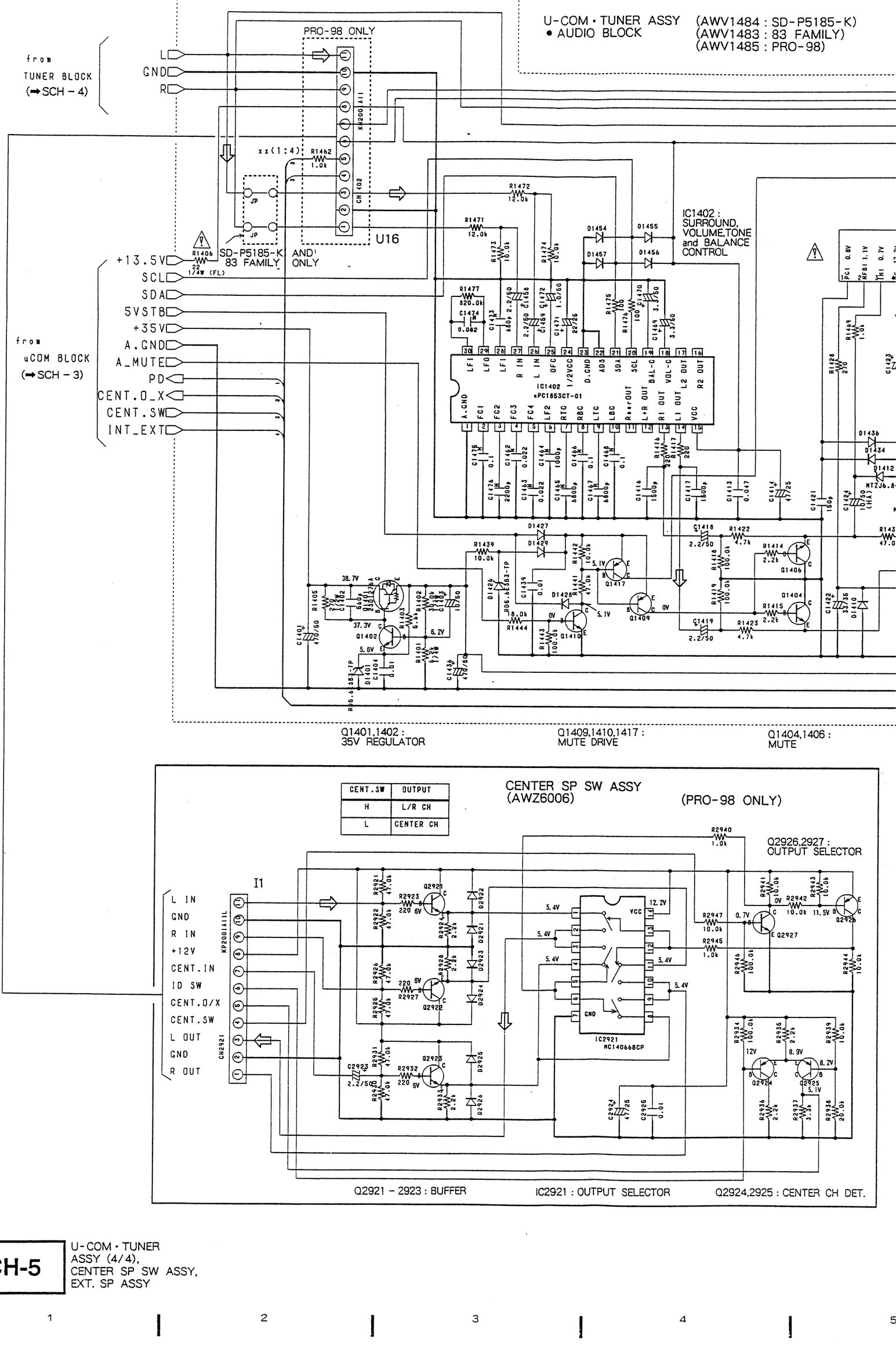
⑤ U3 Pin 2 (TV L)
V range : 1V/div.
H range : 1msec/div.



U-COM • TUNER ASSY (3/4)

SCH-4

7.5 U-COM • TUNER ASSY (4/4), CENTER SP SW AND EXT. SP ASSEMBLIES



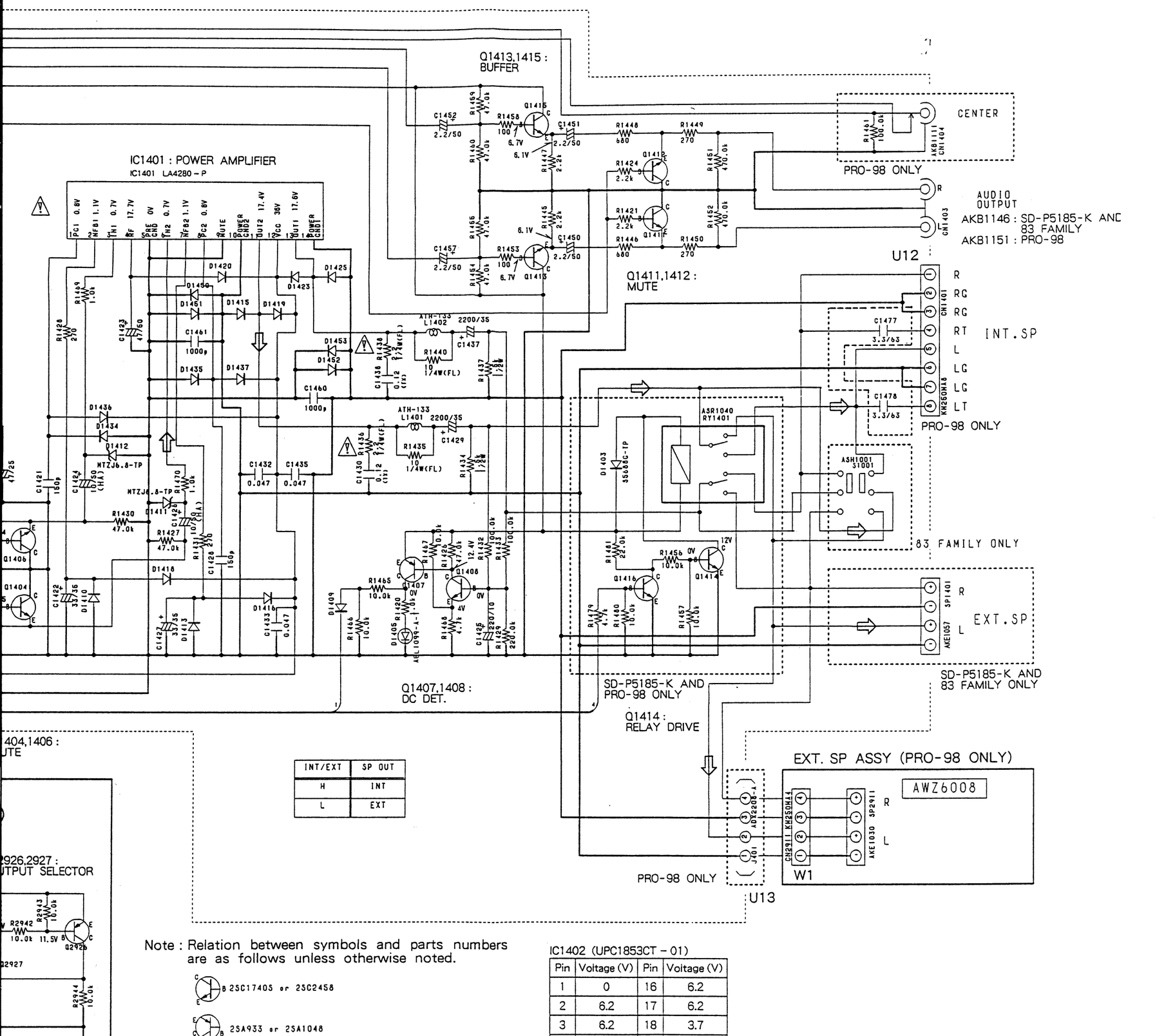
SCH-5 U-COM • TUNER ASSY (4/4), CENTER SP SW ASSY, EXT. SP ASSY

SCH – 5

D-P5185-K)
3 FAMILY)
RO-98)

- Measuring condition of DC voltage
- SP SELECT : INTERNAL
- A MUTE : OFF
- VOLUME : Min.
- TREBLE, BASS, BALANCE : CENTER (STEP 0)
- FRONT SURROUND : OFF

⇨ : Audio signal route (L ch)



INT/EXT	SP OUT
H	INT
L	EXT

Note : Relation between symbols and parts numbers are as follows unless otherwise noted.

2SC1740S or 2SC2458

2SA933 or 2SA1048

HSS104-02 or 1SS252

IC1402 (UPC1853CT – 01)

Pin	Voltage (V)	Pin	Voltage (V)
1	0	16	6.2
2	6.2	17	6.2
3	6.2	18	3.7
4	6.2	19	4.8
5	6.2	20	—
6	6.2	21	—
7	6.2	22	0
8	6.2	23	0
9	6.2	24	6.2
10	6.2	25	6.2
11	6.2	26	6.2
12	6.2	27	6.2
13	6.2	28	6.2
14	6.2	29	6.2
15	12.4	30	6.2

U-COM · TUNER ASSY (4/4), CENTER SP SW ASSY, EXT. SP ASSY

SCH-5

7.6 AV I/O ASSY (1/3) AND Y/C SELECTOR ASSY

AV I/O ASSY (AWZ5985 : SD-P5185-K AND 83 FAMILY)
(AWZ5986 : PRO-98)
• AV I/O AND PORT EXPANDER BLOCKS

PRO-98 ONLY
BNC SOCKET
A12

• SD-P5185-K AND 83 FAMILY FRONT CONTROL ASSY 83 (➡SCH – 18)
• PRO-98 FRONT INPUT ASSY C1 (➡SCH – 19)
A11

C CONNECTOR ASSY K2 (➡SCH – 16)
C CONNECTOR ASSY K1 (➡SCH – 16)
A7

(➡SCH – 6)
PF1 PF2 PF3

P IN P SELECTOR ASSY (➡SCH – 10)
Y2 Y1

Q1611 – 1613,1626 : VIDEO BUFFER

AKB1094 : SD-P5185-K AND 83 FAMILY
AKB1114 : PRO – 98

A9
A8
A10

IC1601 : VIDEO SELECTOR
IC1601 TC4051BP

Q1619,1621,1622 : BUFFER

Q1614,1616 : BUFFER

IC1604,1605 : REGULATOR

Q1615 : VIDEO MUTE
Q1617 : 6dB AMP.

Q1610 : VIDEO BUFFER

IC1602 : AUDIO SELECTOR (L ch)

Q1609 : VIDEO BUFFER

IC1603 : AUDIO SELECTOR (R ch)

Q1601,1602,1604,1606 : REC MUTE

Q1618,1620 : BUFFER

Q1623 : BUFFER

Q1624 : BUFFER

AKB1102 : SD-P5185-K AND 83 FAMILY
AKB1137 : PRO – 98

Q1607 : VIDEO BUFFER

Q1603,1605,1608 : AUDIO MUTE

Q1625,1627 : BUFFER

LOGIC TABLE (IC1601 – IC1603)

	INP 0	INP 1	INP 2
LD	L	L	L
V1	H	L	L
V2	L	H	L
V3	H	H	L
TV	L	L	H

5V-STB
(➡SCH – 6)

A1 CN1604 KN2S0A7L
RELAY, 5V STB, INP 2, INP 1, INP 0, REC MUTE, TU-C
U-COM • TUNER ASSY (2/4) U2 (➡SCH – 3)

A2 CN1605 KN2S0A10L
R, GND, L, GND, 1V-V, GND, 1V-R, 13.5V, 1V-L, Y-SYNC
U-COM • TUNER ASSY (3/4) U3 (➡SCH – 4)

SCH-6

AV I/O ASSY (1/3), Y/C SELECTOR ASSY

3 FAMILY)

: Video signal route (Main-picture)
: Audio signal route (L ch)
: Video signal route (Sub-picture)
(P) : P IN P Y-signal route
(P) : P IN P C-signal route

C CONNECTOR ASSY K1 (➡SCH – 16)

GND M-VIDEO GND S-VIDEO GND MON-C GND MON-Y +5V

A6

C
Y
SUPER GRADATION BLOCK (➡SCH – 8)

(➡SCH – 6)
PinP-shift
PinP
PinP-Reset
Y

CCD AND SUB-UCOM BLOCK (➡SCH – 7)

5V

IC1604,1605 : REGULATOR

5V

+5V
A+9V
SUPER GRADATION BLOCK (➡SCH – 8)
GND
GND (➡SCH – 6)
-5V
A-9V

Q1623 : BUFFER

Q1624 : BUFFER

IC1601 (TC4051BP)

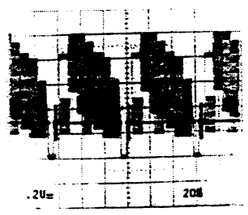
Pin	Voltage (V)	Pin	Voltage (V)
1	2.3	9	0
2	0	10	0
3	– 0.9	11	0
4	0	12	2.3
5	0	13	– 0.6
6	0	14	2.3
7	– 4.9	15	2.3
8	0	16	4.9

IC1602,1603 (TC4051BP)

Pin	Voltage (V)	Pin	Voltage (V)
1	0	9	0
2	0	10	0
3	0	11	0
4	0	12	0
5	0	13	0
6	0	14	0
7	– 4.9	15	0
8	0	16	4.9

• Input signal : Color bar
• Picture quality : Standard
• DC range

(22) **LD VIDEO IN**
V range : 0.2V/div.
H range : 20 μsec/div.



Y/C SELECTOR ASSY (AWZ5987 : SD-P5185-K AND 83 FAMILY) (AWZ5988 : PRO-98)

V3Y GND GND V3C +6V -5V INP 0 INP 1 INP 2 C GND GND Y
CN2152 AKF1011

T1

Q2151 – 2156,2165,2166 : BUFFER

AKB1065-A

D
LD
V1
V2

V3Y
V3C
LDY
LDC
V1Y
V1C
V2Y
V2C

IC2151 : INPUT SELECTOR

Q2161 – 2164 : BUFFER

IC2151 (TC4052BP)

Pin	Voltage (V)	Pin	Voltage (V)
1	– 0.6	9	0
2	2.0	10	0
3	– 0.8	11	2.0
4	2.0	12	– 0.6
5	2.0	13	– 0.8
6	0	14	2.0
7	– 4.8	15	2.0
8	0	16	4.8

IC2251 : PORT EXPANDER

(➡SCH – 8) CLK
(➡SCH – 8) DATA
(➡SCH – 6) +5V
(➡SCH – 6) GND
(➡SCH – 8) ENB
5VSTB (➡SCH – 6)
ENB-HOLD (➡SCH – 8)

SHIFT
PINP
PF3
PF2
PF1
SG1
SG2
(➡SCH – 6)
(➡SCH – 8)

IC2251 (M66320P)

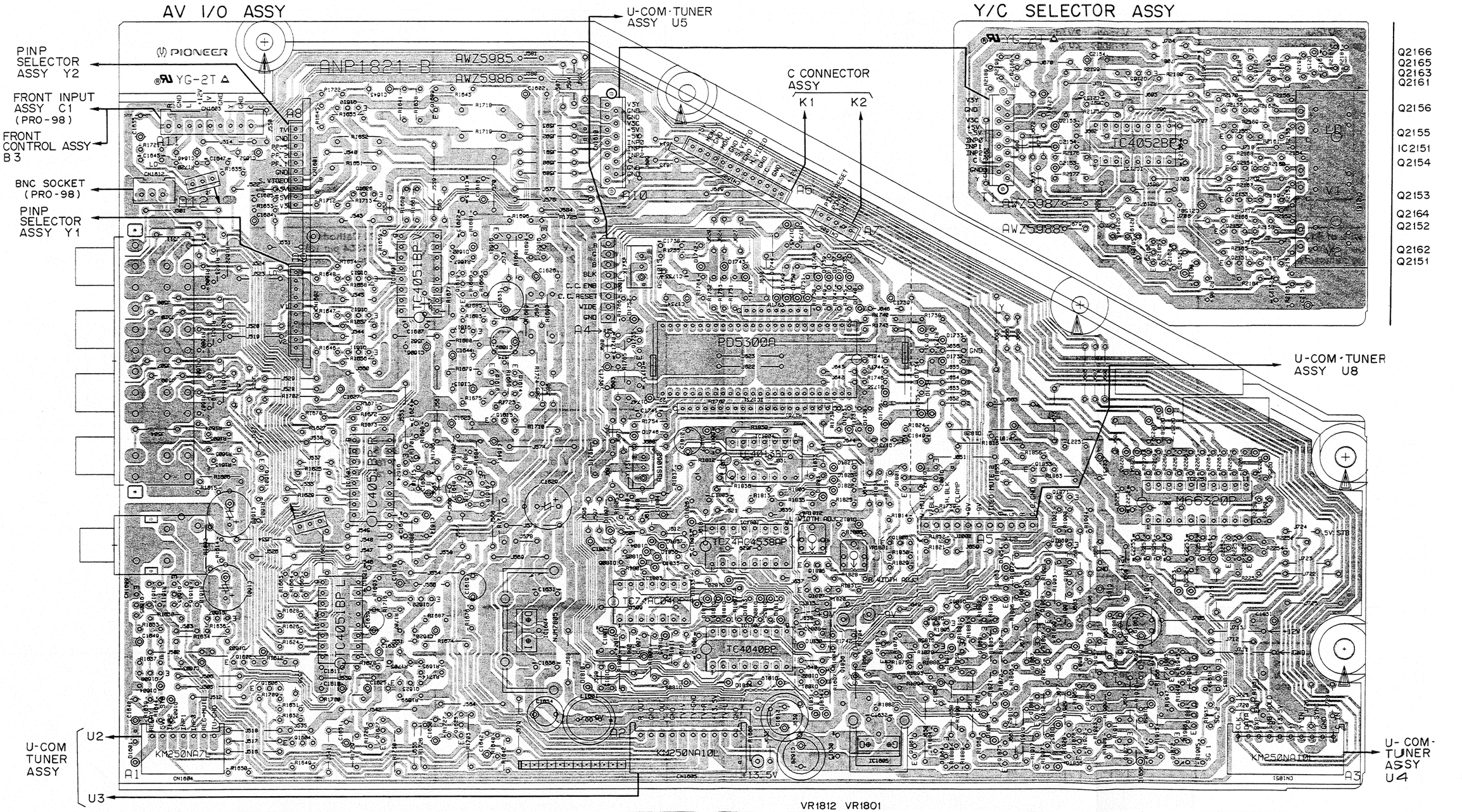
Pin	Voltage (V)	Pin	Voltage (V)
1	0	11	0
2	0	12	0
3	0	13	0
4	5.1	14	0
5	5.1	15	0
6	0.2	16	0
7	0	17	0
8	0	18	0
9	0	19	0
10	0	20	0

AV I/O ASSY (1/3), Y/C SELECTOR ASSY

SCH-6

● This diagram is viewed from the mounted parts side.

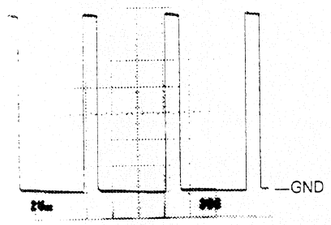
PCB – 2



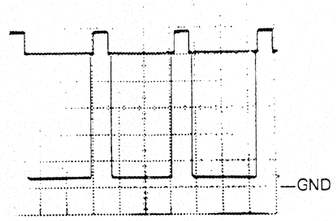
• Waveformes at AV I/O ASSY (CCD BLOCK)

- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

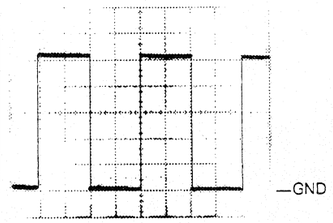
(1) Lead wire of R1821 (H. BLK)
V range : 2V/div.
H range : 20 μsec/div.



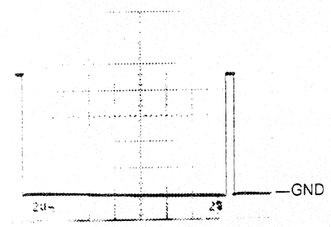
(4) – 2 Q1801 Collector
V range : 2V/div.
H range : 20 μsec/div.
(H rate)



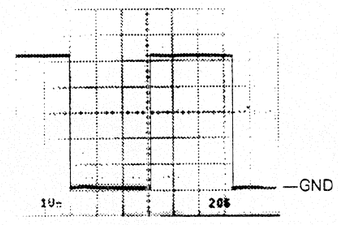
(8) IC1802 pin 3
V range : 1V/div.
H range : 0.5msec/div.



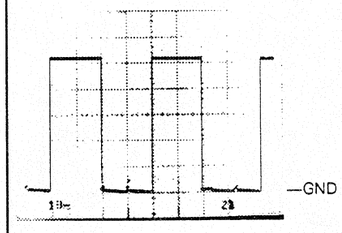
(2) Lead wire of R1739 (V. BLK)
V range : 2V/div.
H range : 2msec/div.



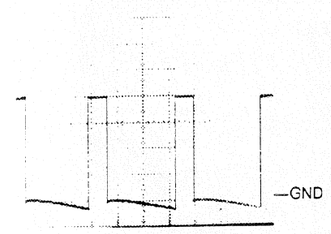
(5) IC1802 pin 9
V range : 1V/div.
H range : 20 μsec/div.



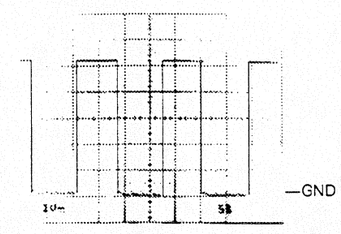
(9) IC1802 pin 4
V range : 1V/div.
H range : 2msec/div.



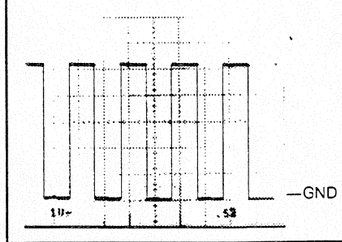
(3) Lead wire of R1832 (WIDE MUTE 2)
V range : 1V/div.
H range : 5msec/div.



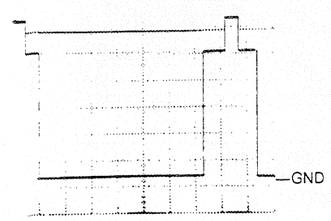
(6) IC1802 pin 13
V range : 1V/div.
H range : 5msec/div.



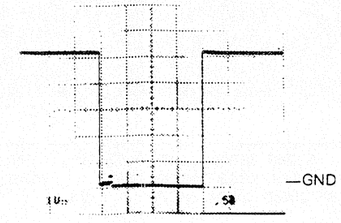
(10) IC1802 pin 5
V range : 1V/div.
H range : 0.5msec/div.



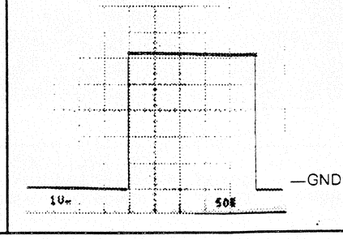
(4) – 1 Q1801 Collector
V range : 2V/div.
H range : 2msec/div.
(V rate)



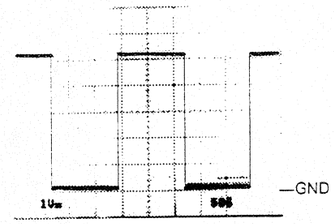
(7) IC1802 pin 2
V range : 1V/div.
H range : 0.5msec/div.



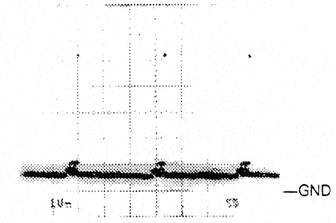
(11) IC1802 pin 6
V range : 1V/div.
H range : 50 μsec/div.



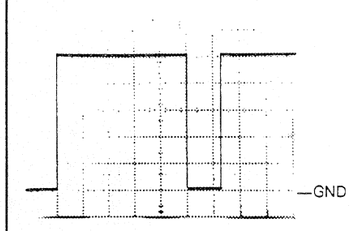
(12) IC1802 pin 7
V range : 1V/div.
H range : 50 μsec/div.



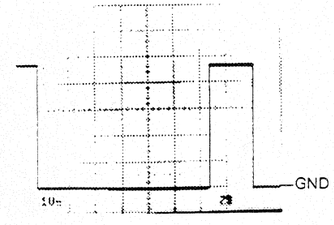
(16) IC1804 pin 11
V range : 1V/div.
H range : 5msec/div.



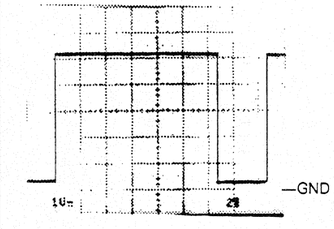
(20) IC1801 pin 9
V range : 1V/div.
H range : 10 μsec/div.



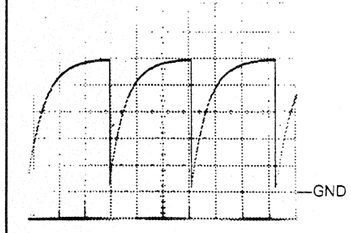
(13) IC1804 pin 2
V range : 1V/div.
H range : 2msec/div.



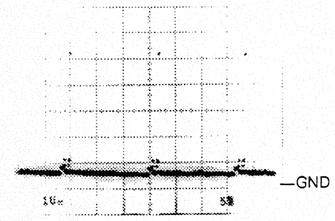
(17) D1821 Cathode (or IC1804 pin 13)
V range : 1V/div.
H range : 2msec/div.



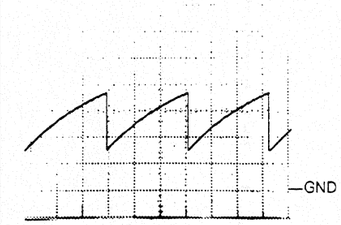
(21) IC1801 pin 14
V range : 1V/div.
H range : 20 μsec/div.



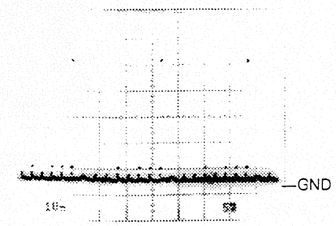
(14) IC1804 pin 3
V range : 1V/div.
H range : 5msec/div.



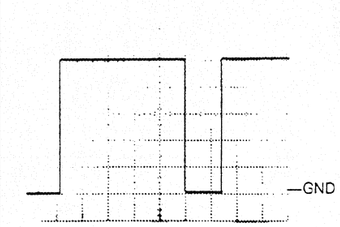
(18) IC1801 pin 2
V range : 1V/div.
H range : 20 μsec/div.



(15) IC1804 pin 4
V range : 1V/div.
H range : 5msec/div.



(19) IC1801 pin 6
V range : 1V/div.
H range : 10 μsec/div.



7.7 AV I/O ASSY (2/3)

1.RESISTERS

Indicated in 1/8W; 5%

tolerance uniess otervise notes k:k ,M:M .

2.CAPACITORS

Indicated in capacity (uF)/voltage uniess

othervise noted p:pF .

Indication vithout voitage is 50V .

2SA933S

2SC1740S

HSS104-02-TP

AV I/O ASSY (AWZ5985 : SD-P5185-K AND 83 FAMILY)
(AWZ5986 : PRO-98)

• CCD AND SUB U-COM BLOCK

IC1731 : CLOSED CAPTION SIGNAL DETECTOR AND CHARACTER DECODER

Q1731 : BUFFER

Q1735 : RESET

IC1731

PD5300A

IC1802 : H PULSE COUNTER FOR VIDEO MUTE 2

IC1803 : INVERTER IC

OSD B

OSD G

OSD R

5V

4.9V

0V

DATA

CLK

C.C. V.BLK

C.C. H.BLK

5.1V

2.5V

J1002 KK-1021-8

OSD R
OSD G
OSD B
BLK
C.C.ENB
C.C.RESET
WIDE SW.
GND

A4

PINP RESET
Y
+5V

U-COM・TUNER ASSY (2/4) U5 (➡SCH－3)

TO AV I/O BLOCK (➡SCH－6)

AV I/O ASSY (2/3)

SCH-7

SCH – 7

IC1801 : WIDE MUTE TIMING GENERATOR

L WIDTH ADJ.

R WIDTH ADJ.

IC1801
TC74HC4538AP

Q1801 :
INVERTER

Q1802 :
WIDE SWITCH

Q1805 :
WIDE SWITCH

Q1806 :
WIDE MUTE 2
BUFFER

Q1807 :
INVERTER

IC1804 :
FLIP FLOP IC FOR VIDEO
MUTE 2 AND WIDE MUTE 2

BLK.OUT

13.2V

+12V

WIDE MUTE 1

WIDE MUTE 2

WIDE SW.

+5V

C.C. V.BLK

C.C. H.BLK

C.C.GND

OSD_B

OSD_G

OSD_R

CLK

DATA

12V(R1851)

V.BLK

H.BLK

WIDE_MUTE_2

VIDEO_MUTE_2

-Y

Y

+5V

TO SUPER GRADATION BLOCK
(➡SCH – 8)

I/O BLOCK
(➡SCH – 6)

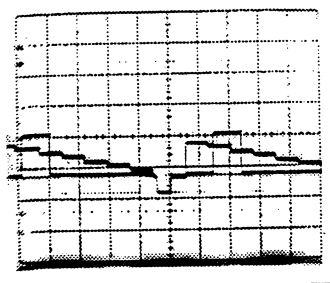
AV I/O ASSY
(2/3)

SCH-7

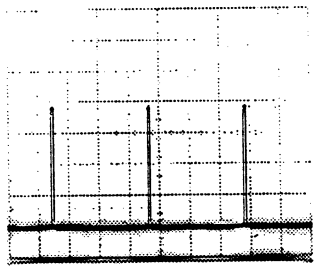
● Waveforms at AV I/O ASSY (SUPER GRADATION BLOCK)

- Input signal : Color bar
- Picture quality : Standard
- DC range

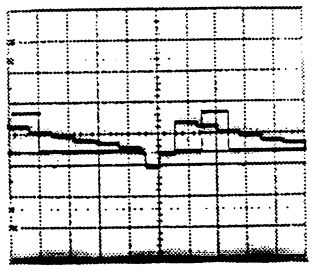
① Q1853 Base
V range : 1V/div.
H range : 10 μsec/div.



② Q1864 Collector
V range : 2V/div.
H range : 20 μsec/div.

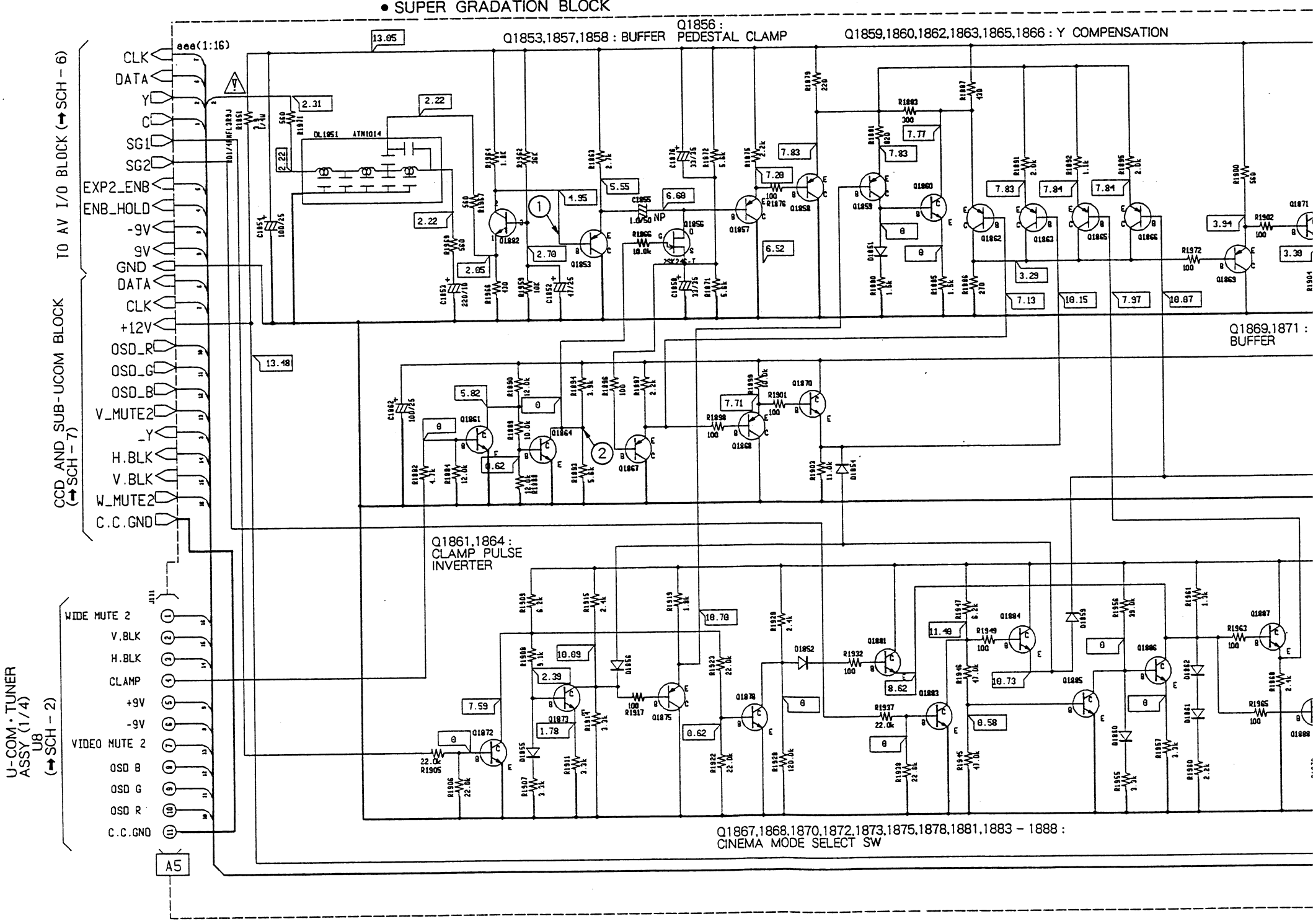


③ Q1871 Emitter
V range : 1V/div.
H range : 10 μsec/div.



7.8 AV I/O ASSY (3/3)

AV I/O ASSY (AWZ5985 : SD-P5185-K AND 83 FAMILY)
(AWZ5986 : PRO-98)
● SUPER GRADATION BLOCK



Note: Diode HSS104-02 unless otherwise noted.
Resister indicated in Ω ,1/4W,1/8W +5%tolerance
unless otherwise noted. k:k Ω . M:M Ω .
Capacitor indicated in Capacity(μF)/Voltage(V)
unless otherwise noted. p:pF.
Indication without voltage is 50V except Electrolytic capacitor.

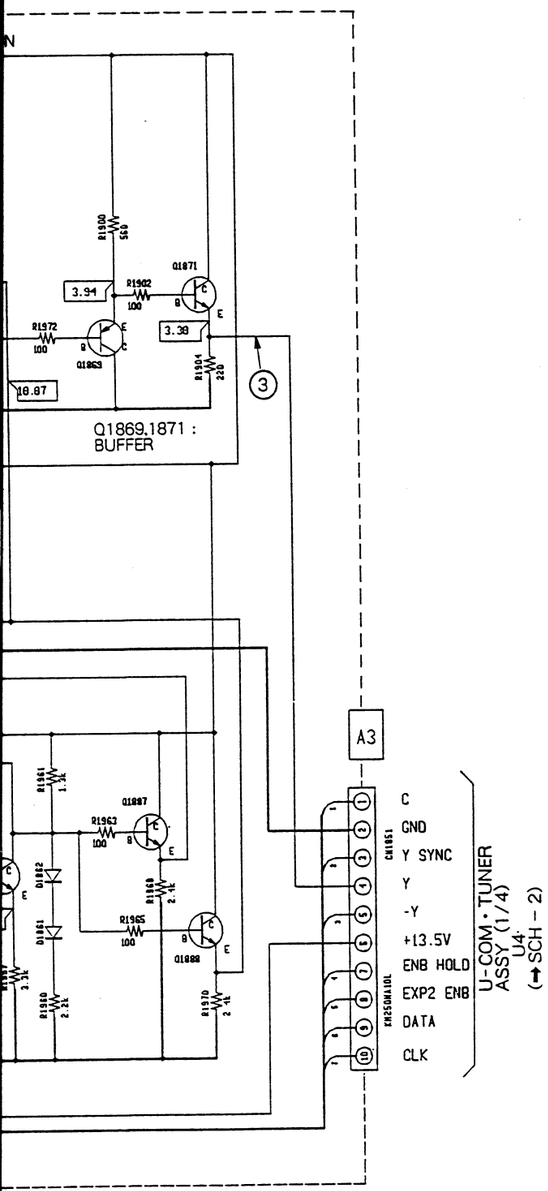
L=0V,H=+5V

	CINEMA MODE		
	OFF(STD)	CINEMA1	CINEMA2
SG1	L	L	H
SG2	L	H	H

2SA933S
2SC1740S

SCH-8 AV I/O ASSY (3/3)

SCH – 8



A933S

C1740S

• Waveformes at P IN P ASSY (Y/C SEPARATION BLOCK)

- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

① **IC3201 pin 45** V range : 500mV/div. H range : 0.2 μsec/div.	④ **Q3229 Emitter** V range : 500mV/div. H range : 10 μsec/div.
② **TP3203 (Y OUT)** V range : 200mV/div. H range : 10 μsec/div. (AC range)	⑤ **IC3201 pin 6** V range : 200mV/div. H range : 10 μsec/div.
③ **TP3202 (C OUT)** V range : 200mV/div. H range : 10 μsec/div. (AC range)	⑥ **IC3201 pin 8** V range : 200mV/div. H range : 10 μsec/div.

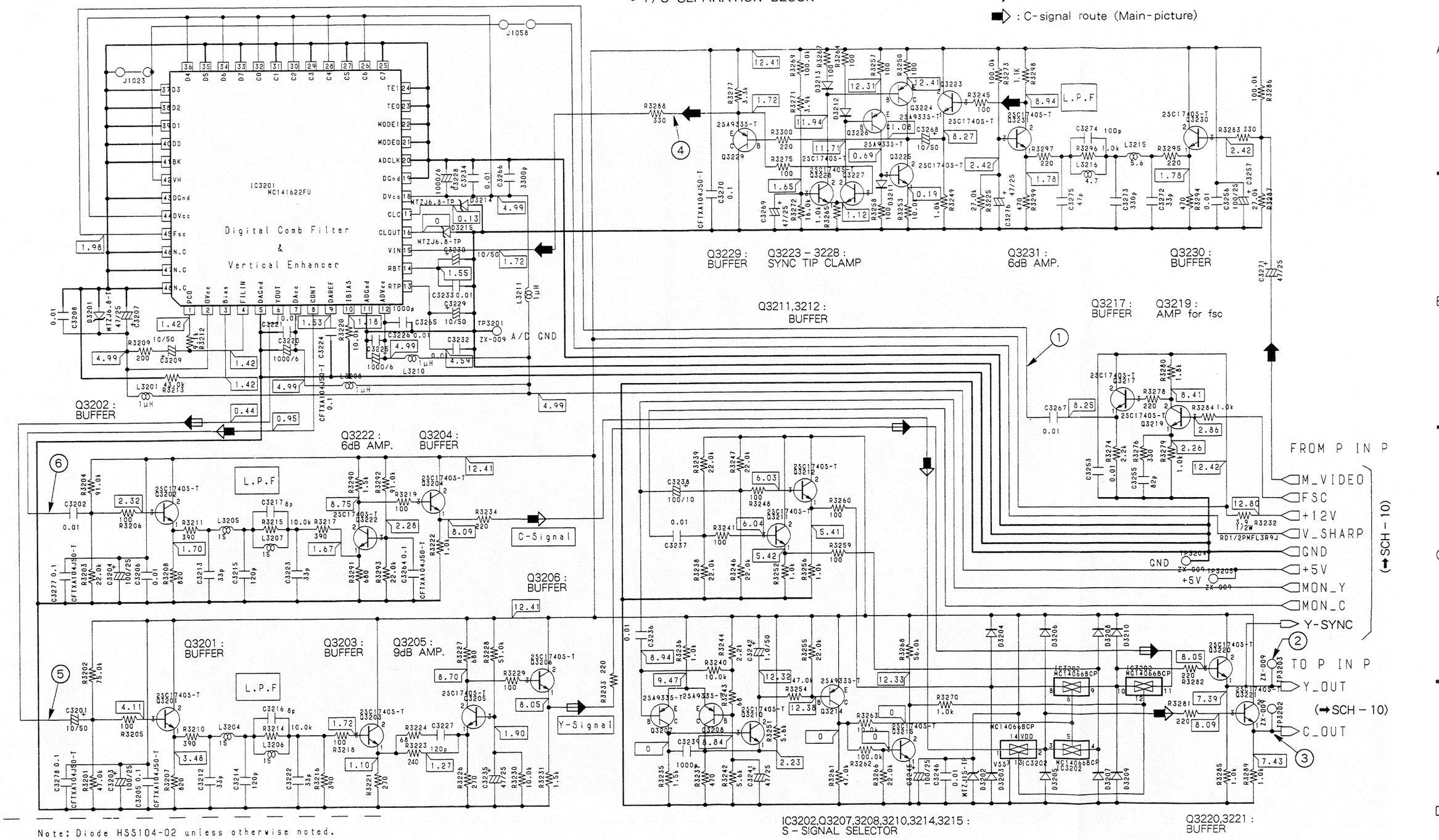
AV I/O ASSY (3/3)

SCH-8

7.9 P IN P ASSY (1/2)

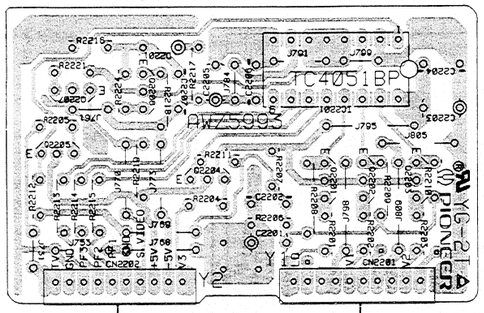
P IN P ASSY (AWZ5992)
● Y/C SEPARATION BLOCK

: Video signal route (Main-picture)
: Y-signal route (Main-picture)
: C-signal route (Main-picture)



Note: Diode HSS104-02 unless otherwise noted.

PINP SELECTOR ASSY



IC2201
Q2207
Q2206

Q2205
Q2201
|
Q2204

(ANP1821-A)

AV I/O ASSY A8

AV I/O ASSY A9

PINP ASSY

PCB – 3

C CONNECTOR ASSY K3

C CONNECTOR ASSY K4

VR3003
VR3002
VR3001

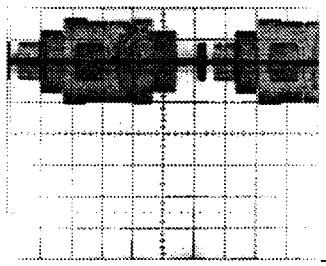
Q3004
IC3002
Q3002 Q3019
Q3014
Q3217
Q3230
Q3008
IC3503
Q3202
Q3231
Q3223
|
Q3226
Q3203
Q3205
Q3227
|
Q3229
Q3206
IC3201
Q3222 Q3012
Q3013
IC3001
Q3221
Q3201
Q3204
Q3018
Q3220
Q3210
Q3211
Q3212
Q3215
Q3208
Q3214 Q3009
Q3207
Q3001
Q3003

● This diagram is viewed from the mounted parts side.

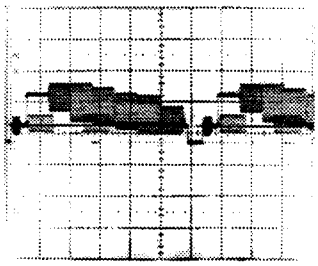
• Waveformes at P IN P ASSY (P IN P BLOCK)

- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

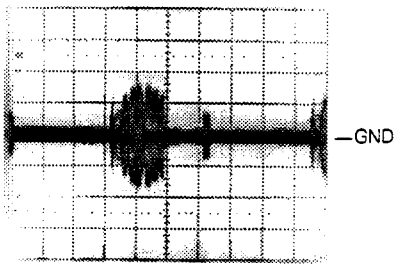
(1) IC3001 pin 55
V range : 0.5V/div.
H range : 10 μsec/div.



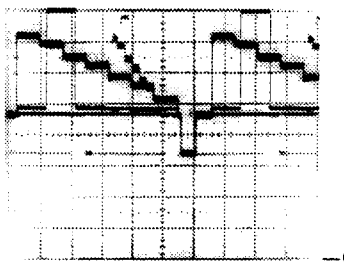
(4) IC3001 pin 66
V range : 0.5V/div.
H range : 10 μsec/div.



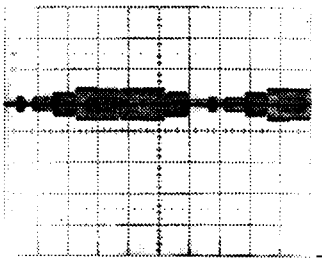
(6) – 2 TP3009 (CDA))
V range : 50mV/div.
H range : 10 μsec/div.
(AC range)



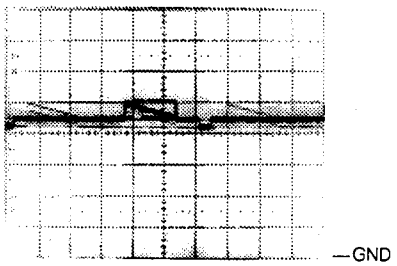
(2) Q3003 Base
V range : 0.5V/div.
H range : 10 μsec/div.



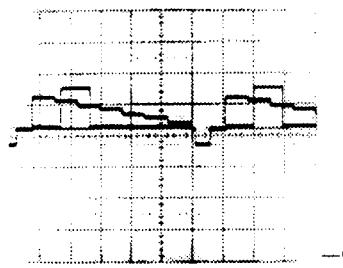
(5) IC3001 pin 68
V range : 0.5V/div.
H range : 10 μsec/div.



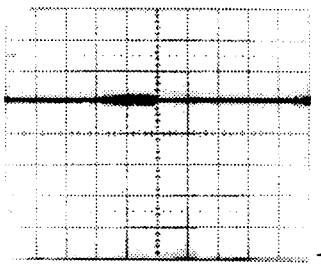
(7) TP3008 (YDA)
V range : 0.5V/div.
H range : 10 μsec/div.



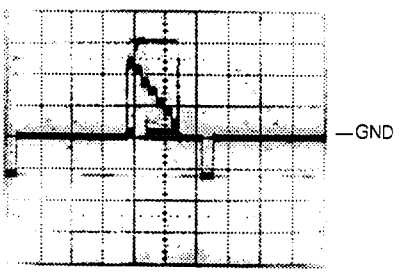
(3) IC3001 pin 65
V range : 0.5V/div.
H range : 10 μsec/div.

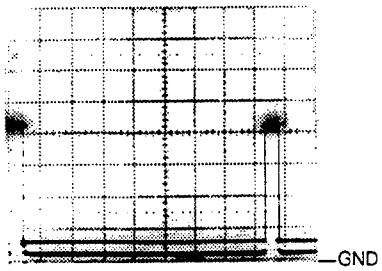
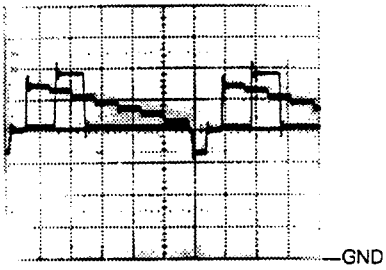
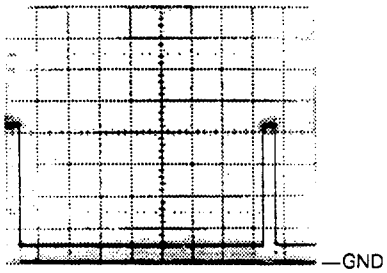
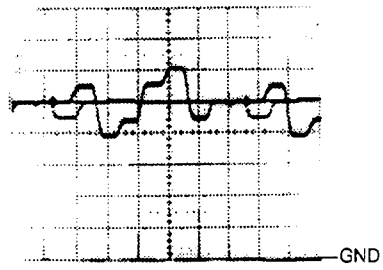
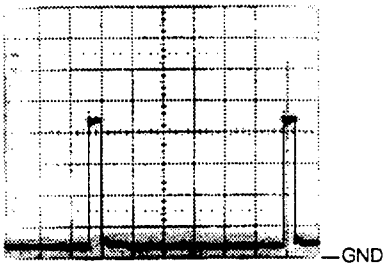
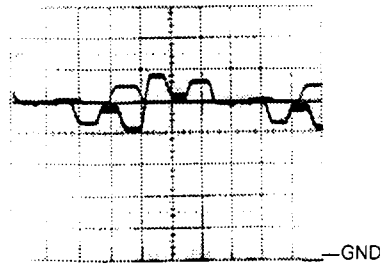
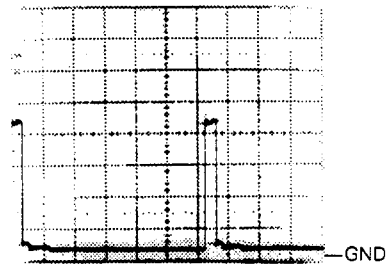


(6) – 1 TP3009 (CDA)
V range : 0.5V/div.
H range : 10 μsec/div.

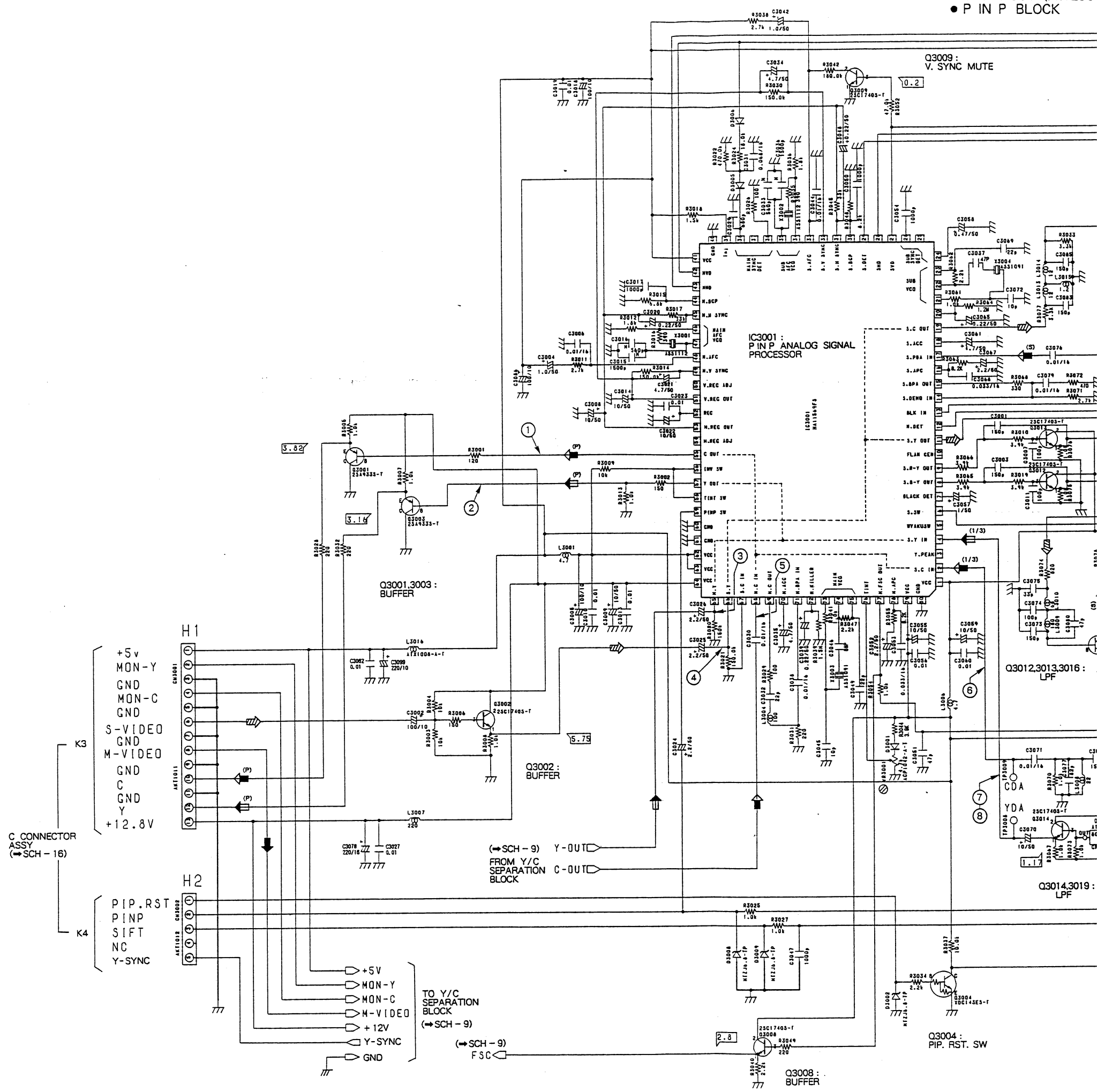


(8) TP3008 (YDA)
V range : 0.1V/div.
H range : 10 μsec/div.
(AC range)



(9) **TP3002 (PVD)** V range : 1V/div. H range : 2msec/div. 	(12) **TP3005 (YAD)** V range : 0.5V/div. H range : 10 μsec/div. 	(15) **TP3004 (SVD)** V range : 1V/div. H range : 2msec/div. 
(10) **TP3006 (RYAD)** V range : 0.5V/div. H range : 10 μsec/div. 	(13) **TP3001 (PHD)** V range : 1V/div. H range : 10 μsec/div. 	
(11) **TP3007 (BYAD)** V range : 0.5V/div. H range : 10 μsec/div. 	(14) **TP3003 (SHD)** V range : 1V/div. H range : 10 μsec/div. 	

7.10 P IN P ASSY (2/2) AND P IN P SELECTOR ASSY



[IC3001 (HA11569FS)]

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	4.96	21	3.68	41	4.97	61	0
2	2.61	22	2.52	42	0	62	4.98
3	2.3	23	2.52	43	0.84	63	4.98
4	2.32	24	0.43	44	0.49	64	12.51
5	0	25	2.21	45	1.79	65	2.36
6	0	26	2.35	46	2.78	66	2.35
7	3.05	27	0.48	47	2.1	67	0
8	1.96	28	0.85	48	2.31	68	2.48
9	1.95	29	0	49	1.89	69	1.78
10	2.67	30	0.54	50	2.19	70	2.81
11	1.66	31	1.79	51	2.23	71	2.87
12	4.25	32	1.89	52	3.72	72	2.12
13	0(0.97)	33	2.3	53	2.13	73	3.78
14	2.14	34	2.77	54	2.11	74	2.56
15	2.4	35	2.11	55	3.15	75	2.55
16	2.83	36	0	56	3.32	76	1.88
17	2.86	37	2.21	57	2.84	77	3.48
18	2.74	38	2.34	58	3.32	78	2.81
19	1.62	39	0.65	59	0	79	4.96
20	2.1	40	0	60	0	80	0

Note:DC voltage(V) at color bar signal input

[IC3002 (HD49412FS)]

Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0 (5.03)	21	0	41	2.82	61	2.32	81	—
2	2.04	22	0	42	3.44	62	0	82	—
3	2.2	23	0	43	5.0 (4.41)	63	2.32	83	—
4	2.18	24	0.95	44	5.01	64	5.01	84	—
5	0	25	4.92	45	—	65	5.02	85	—
6	0.59	26	2.56	46	—	66	—	86	—
7	0.86	27	2.36	47	—	67	—	87	0.84
8	5.02 (2.97)	28	4.92	48	5.02 (4.12)	68	—	88	0.04
9	4.98 (1.27)	29	0	49	0	69	—	89	4.99
10	4.21	30	0.02	50	—	70	—	90	0
11	4.95	31	—	51	—	71	—	91	0
12	5.12 (2.35)	32	—	52	—	72	—	92	0.84
13	4.95	33	—	53	—	73	—	93	0.48
14	4.89 (2.51)	34	—	54	—	74	—	94	0
15	4.95	35	—	55	—	75	—	95	4.96
16	4.9 (2.51)	36	—	56	—	76	—	96	4.96
17	0.31	37	—	57	—	77	—	97	0
18	5.12 (2.49)	38	—	58	—	78	—	98	0.99
19	5.12 (2.02)	39	—	59	4.99	79	—	99	2.38
20	0	40	3.4	60	4.99	80	—	100	2.38

Note:DC voltage(V) at color bar signal input and PINP OFF
Value in () DC voltage at PINP ON

Note : Diode HSS104-02 unless otherwise noted.

P IN P ASSY (2/2),
P IN P SELECTOR
ASSY

SCH-10

P IN P ASSY (AWZ5992)
● P IN P BLOCK

: Video signal route (Main-picture)
: Video signal route (Sub-picture)
: Y-signal route (Main-picture)
: C-signal route (Main-picture)
(S) : Y-signal route (Sub-picture)
(S) : C-signal route (Sub-picture)
(1/3) : Y-signal route (1/3 sub-picture)
(1/3) : C-signal route (1/3 sub-picture)
(S) : R – Y Signal route (Sub-picture)
(S) : B – Y Signal route (Sub-picture)
(P) : P IN P Y-signal route
(P) : P IN P C-signal route

PHD PVD
SVD SHD
RYAD
BYAD
YAD

F3001 :
14.3MHz OSC

IC3002 :
P IN P MEMORY
CONTROLER

IC3003 :
256k bit MULTIPORT
VIDEO RAM

F3002 :
16.1MHz OSC

Q3012,3013,3016 :
LPF

Q3014,3019 :
LPF

CDA
YDA

P IN P SELECTOR ASSY
(AWZ5993)

IC2201 :
P IN P SUB PICTURE
SELECTOR

Q2206,2207 :
BUFFER

A9
LD
NC
NC
NC
V1
NC
NC
NC
V2
NC

AV I/O
ASSY (1/3)
(➡SCH – 6)

A8
V3
-5v
+5v
S-VIDEO
GND
PF1
PF2
PF3
GND
TV

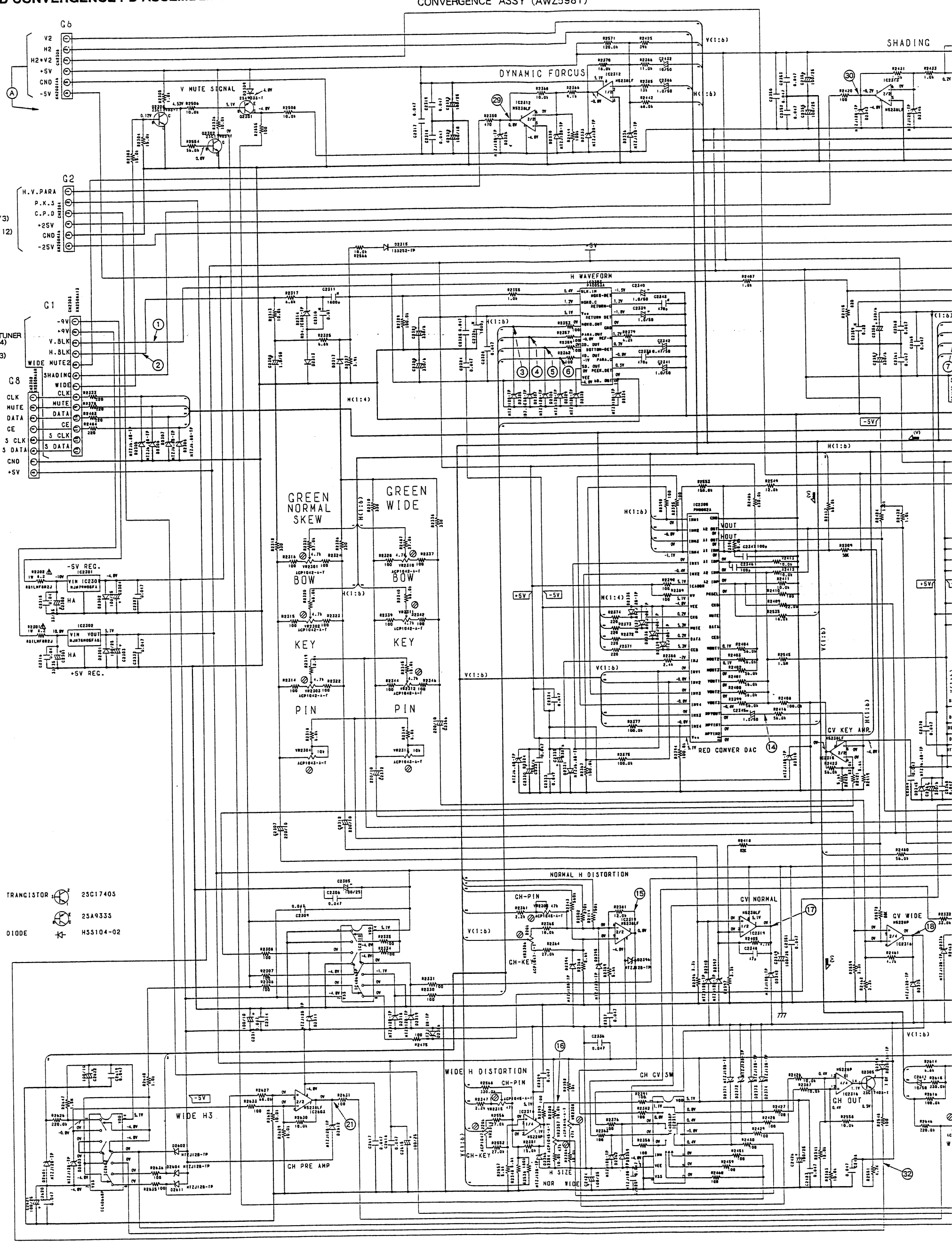
IC2201 (TC40518P)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	2.09	9	0.0
2	0.0	10	0.0
3	-0.68	11	6.0
4	0.0	12	2.09
5	0.0	13	-0.4
6	0.0	14	2.09
7	-4.91	15	2.09
8	0	16	4.81

P IN P ASSY (2/2),
P IN P SELECTOR
ASSY

SCH-10

7.11 CONVERGENCE, SUB CONVERGENCE AND CONVERGENCE PD ASSEMBLIES



SCH-11 CONVERGENCE ASSY, SUB CONVERGENCE ASSY, CONVERGENCE PD ASSY

SCH – 11

(V) : V. Deflection signal route

SHADING

SUB CONVERGENCE ASSY (AWZ6001)

SUB PIN WAVEFORMER

V WAVEFORM

BLUE CONVER DAC

GV PIN AMP

CONVER AMP

CONVERGENCE YOKES (⇒SCH – 1)

BV MUTE

RV MUTE

4TH DISTORTION V

4TH DISTORTION H

GV WIDE

GV OUT

KEY AMP.

NORMAL V SIZE

WIDE V SIZE

V. GH AMP

V AMP MUTE

POWER DOWN

CONVERGENCE PD ASSY
(AWZ5991)

CONVERGENCE ASSY,
SUB CONVERGENCE ASSY,
CONVERGENCE PD ASSY

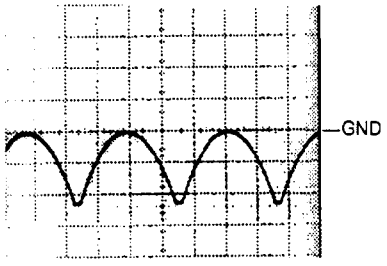
SCH-11

• Waveformes at CONVERGENCE AND SUB CONVERGENCE ASSEMBLIES

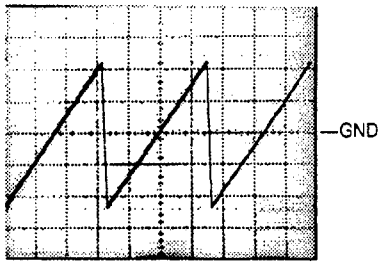
- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

① G1 Pin 3
V range : 5V/div.
H range : 5msec/div.

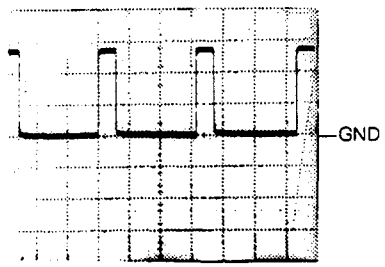
④ D2327 Cathode
V range : 1V/div.
H range : 20 μsec/div.



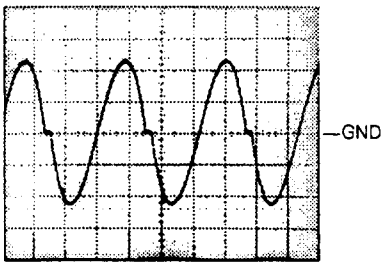
⑦ D2352 Cathode
V range : 0.5V/div.
H range : 5msec/div.



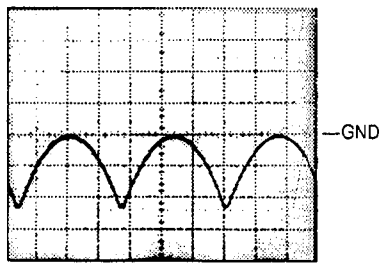
② G1 Pin 4
V range : 5V/div.
H range : 20 μsec/div.



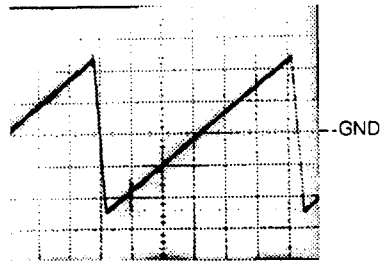
⑤ D2328 Cathode
V range : 0.5V/div.
H range : 20 μsec/div.



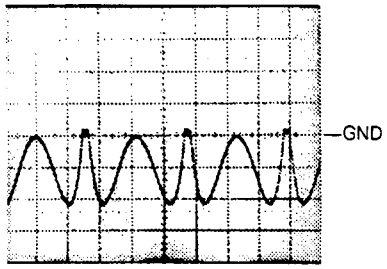
⑧ D2355 Cathode
V range : 1V/div.
H range : 5msec/div.



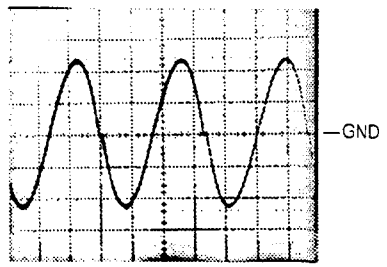
③ D2325 Cathode
V range : 0.5V/div.
H range : 10 μsec/div.



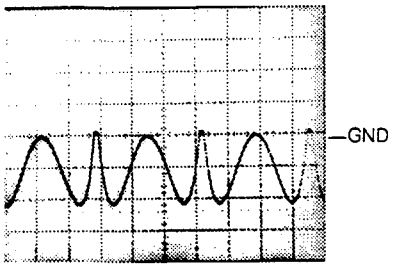
⑥ D2329 Cathode
V range : 1V/div.
H range : 20 μsec/div.



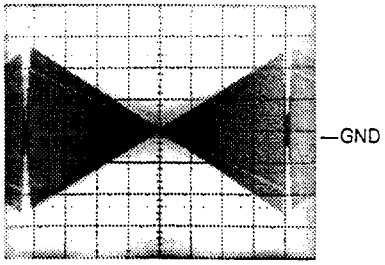
⑨ D2357 Cathode
V range : 0.5V/div.
H range : 5msec/div.



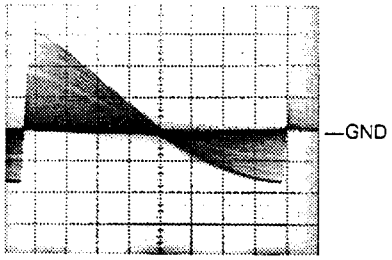
(10) **D2358 Cathode**
V range : 1V/div.
H range : 5msec/div.



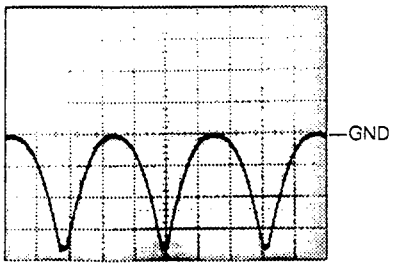
(14) **C2345 – side**
V range : 0.5V/div.
H range : 2msec/div.



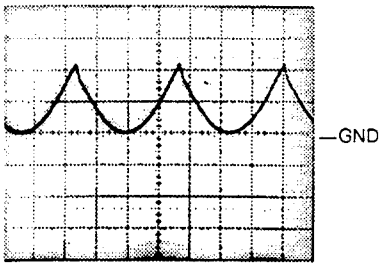
(18) **IC2316 Pin 7**
V range : 0.2V/div.
H range : 2msec/div.



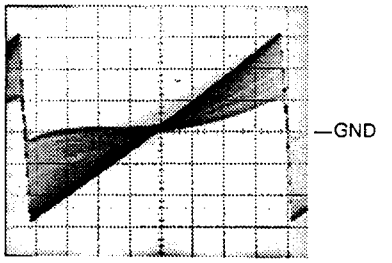
(11) **IC2320 Pin 7**
V range : 0.2V/div.
H range : 20 μsec/div.



(15) **IC2319 Pin 7**
V range : 1V/div.
H range : 5msec/div.

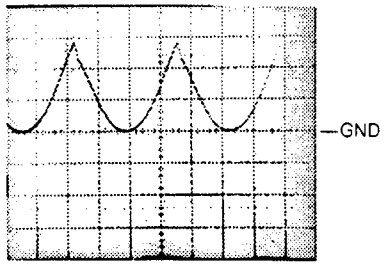


(19) **IC2316 Pin 8**
V range : 0.2V/div.
H range : 2msec/div.

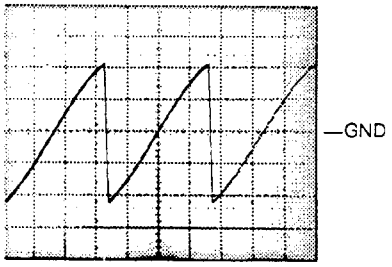


(12) **IC2321 Pin 7**
V range : 0.5V/div.
H range : 5msec/div.

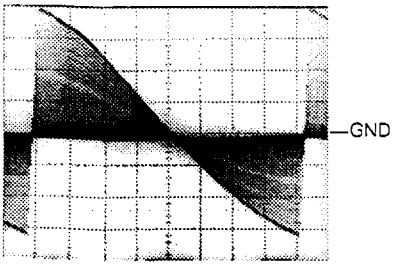
(16) **Between R2391 and R2393**
V range : 1V/div.
H range : 5msec/div.



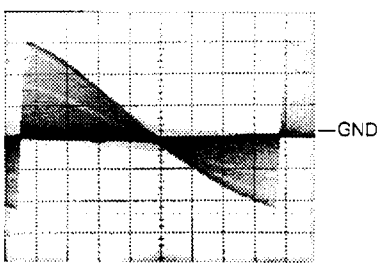
(20) -1 **IC2603 Pin 1**
V range : 0.5V/div.
H range : 5msec/div.
(Normal)



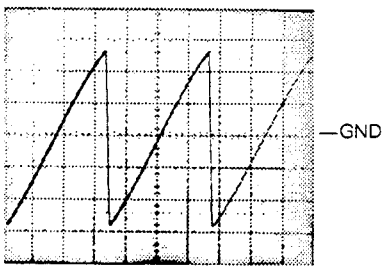
(13) **C2381 – side**
V range : 0.2V/div.
H range : 2msec/div.



(17) **IC2319 Pin 1**
V range : 0.2V/div.
H range : 2msec/div.

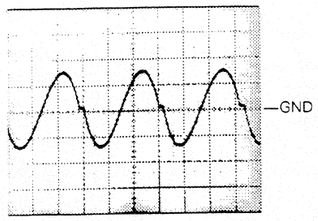


(20) -2 **IC2603 Pin 1**
V range : 0.5V/div.
H range : 5msec/div.
(Zoom)

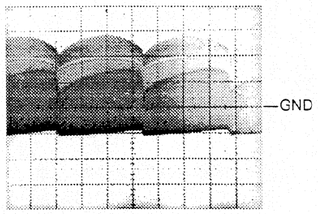


A

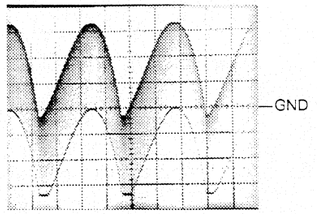
(21) IC2603 Pin 7
V range : 0.2V/div.
H range : 20 μsec/div.
(Zoom)



(25) IC2307 Pin 14
V range : 1V/div.
H range : 5msec/div.

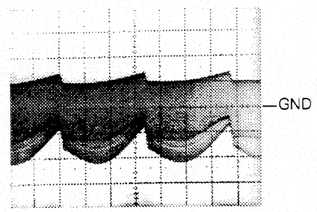


(29) IC2312 Pin 7
V range : 1V/div.
H range : 5msec/div.

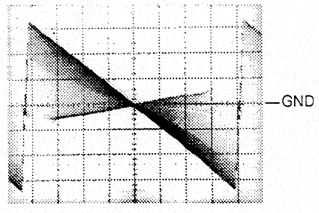


B

(22) IC2307 Pin 4
V range : 1V/div.
H range : 5msec/div.



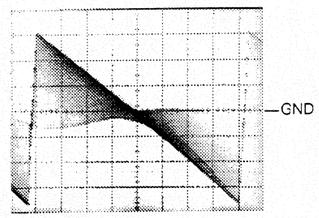
(26) IC2307 Pin 20
V range : 0.2V/div.
H range : 2msec/div.



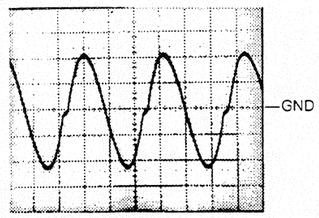
(30) IC2313 Pin 7
V range : 0.5V/div.
H range : 5msec/div.

C

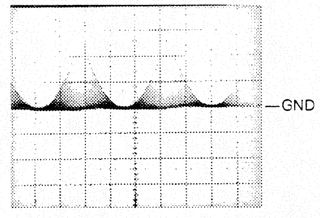
(23) IC2307 Pin 6
V range : 0.2V/div.
H range : 2msec/div.



(27) G4 Pin 4
V range : 1V/div.
H range : 20 μsec/div.
(Zoom)

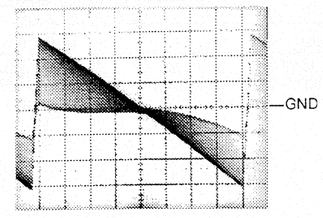


(31) D1 Pin 3
V range : 0.5V/div.
H range : 5msec/div.



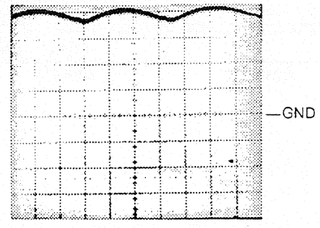
D

(24) IC2307 Pin 12
V range : 0.2V/div.
H range : 2msec/div.

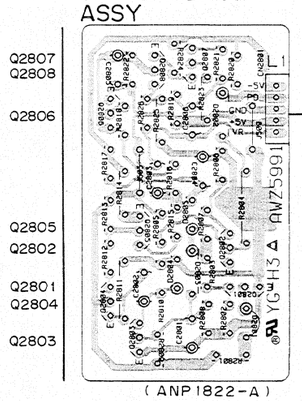


(28) G5 Pin 1
V range : 0.5V/div.
H range : 5msec/div.

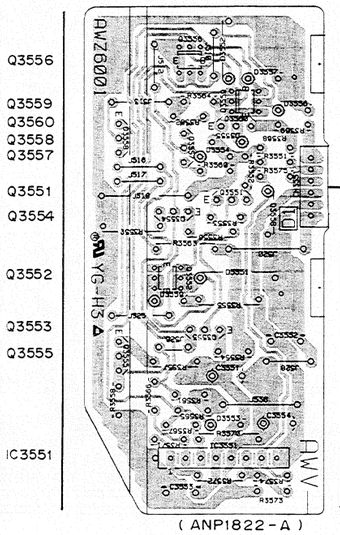
(32) G2 Pin 2
V range : 2V/div.
H range : 5msec/div.



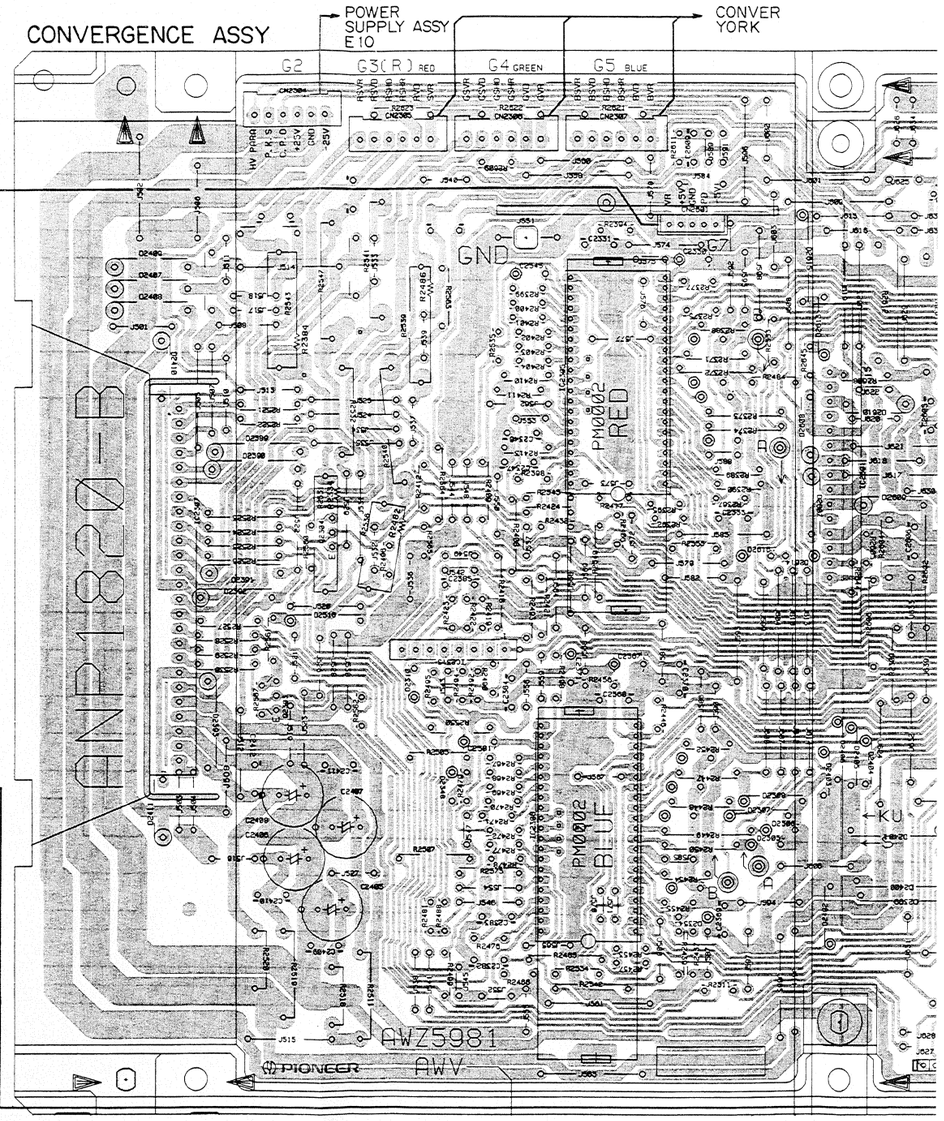
CONVERGENCE PD ASSY



SUB CONVERGENCE ASSY



CONVERGENCE ASSY



● This diagram is viewed from the mounted parts side.

liv.

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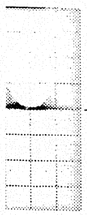
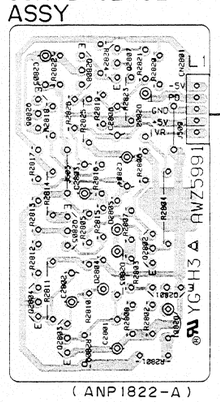
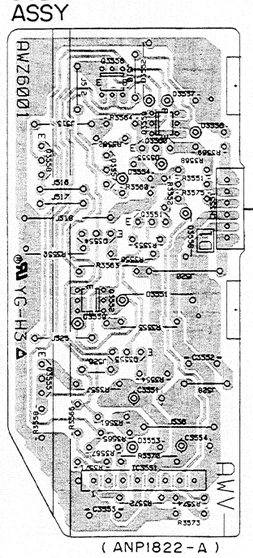


liv.

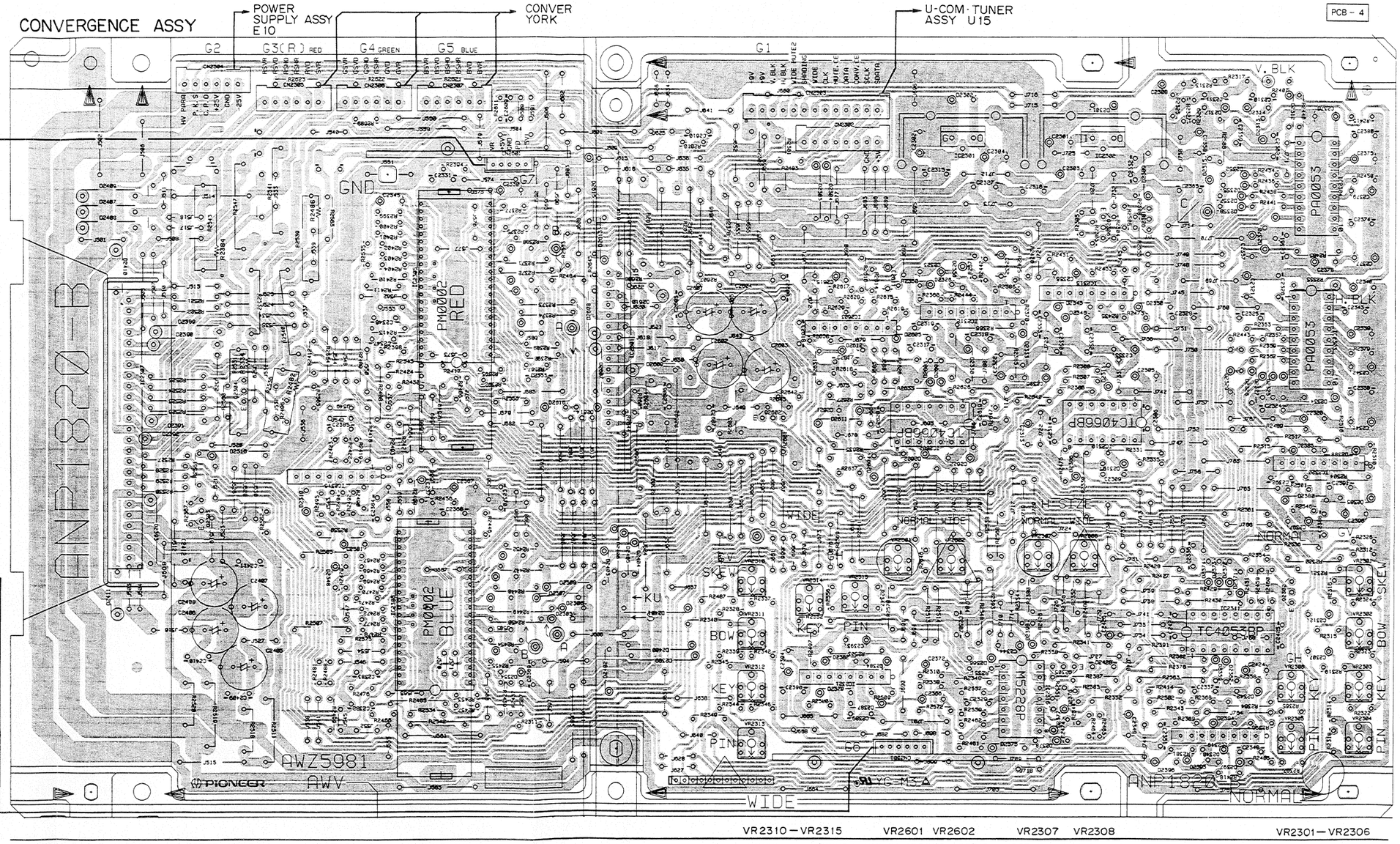
CONVERGENCE PD ASSY



SUB CONVERGENCE ASSY



CONVERGENCE ASSY

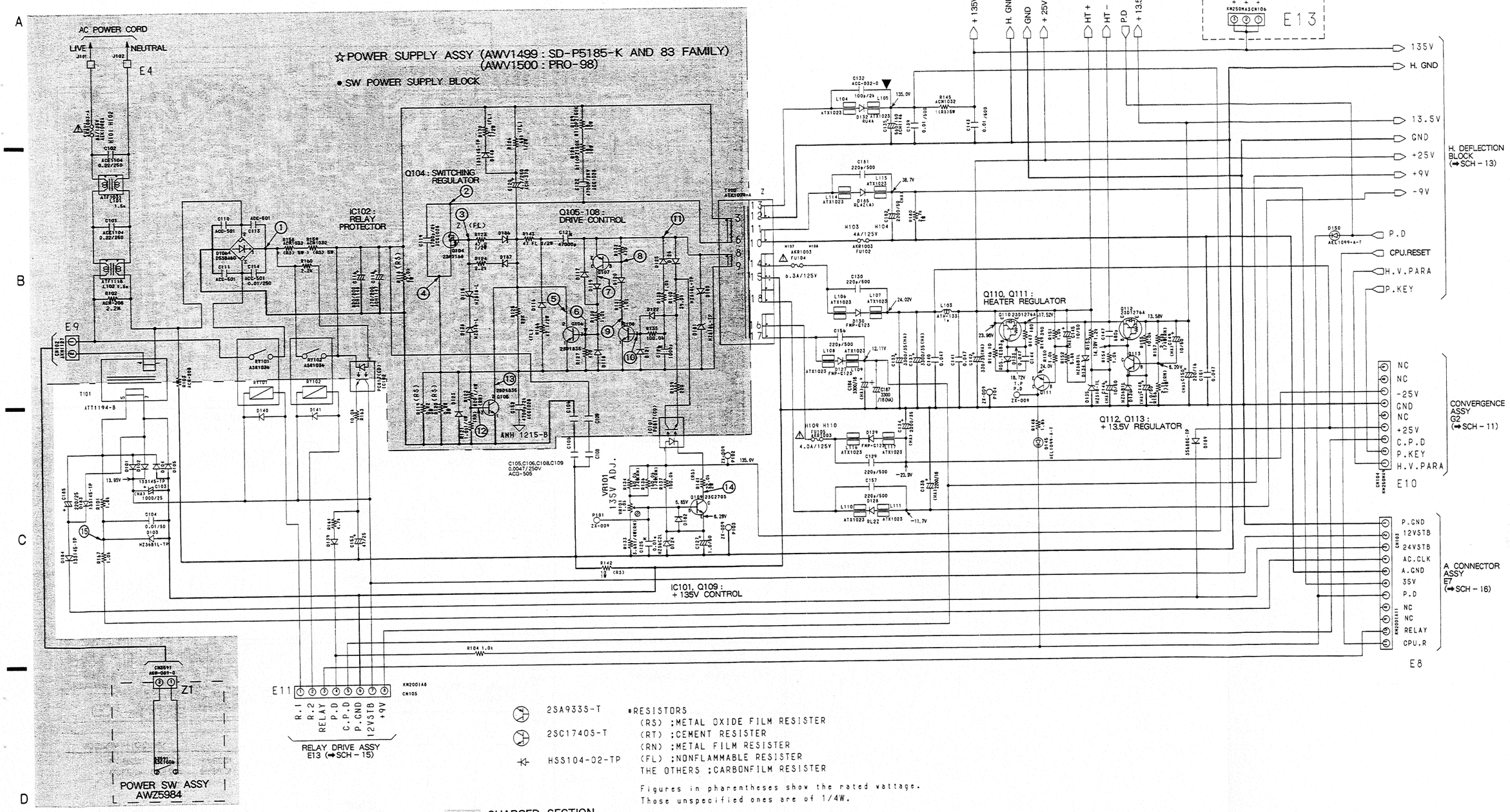


VR2310 – VR2315 VR2601 VR2602 VR2307 VR2308 VR2301 – VR2306

IC2307 Q2303 Q2304 IC2315 IC2306 IC2305 IC2601 Q2602 IC2603 IC2321 IC2602 IC2312 IC2301 IC2316 IC2310 IC2313 IC2302 Q2306 Q2301 IC2311 IC2319 Q2302 IC2320 IC2304 IC2303

● This diagram is viewed from the mounted parts side.

7.12 POWER SUPPLY ASSY (1/3) AND POWER SW ASSY



SCH-12 POWER SUPPLY ASSY (1/3), POWER SW ASSY

POWER SUPPLY ASSY (1/3), POWER SW ASSY SCH-12

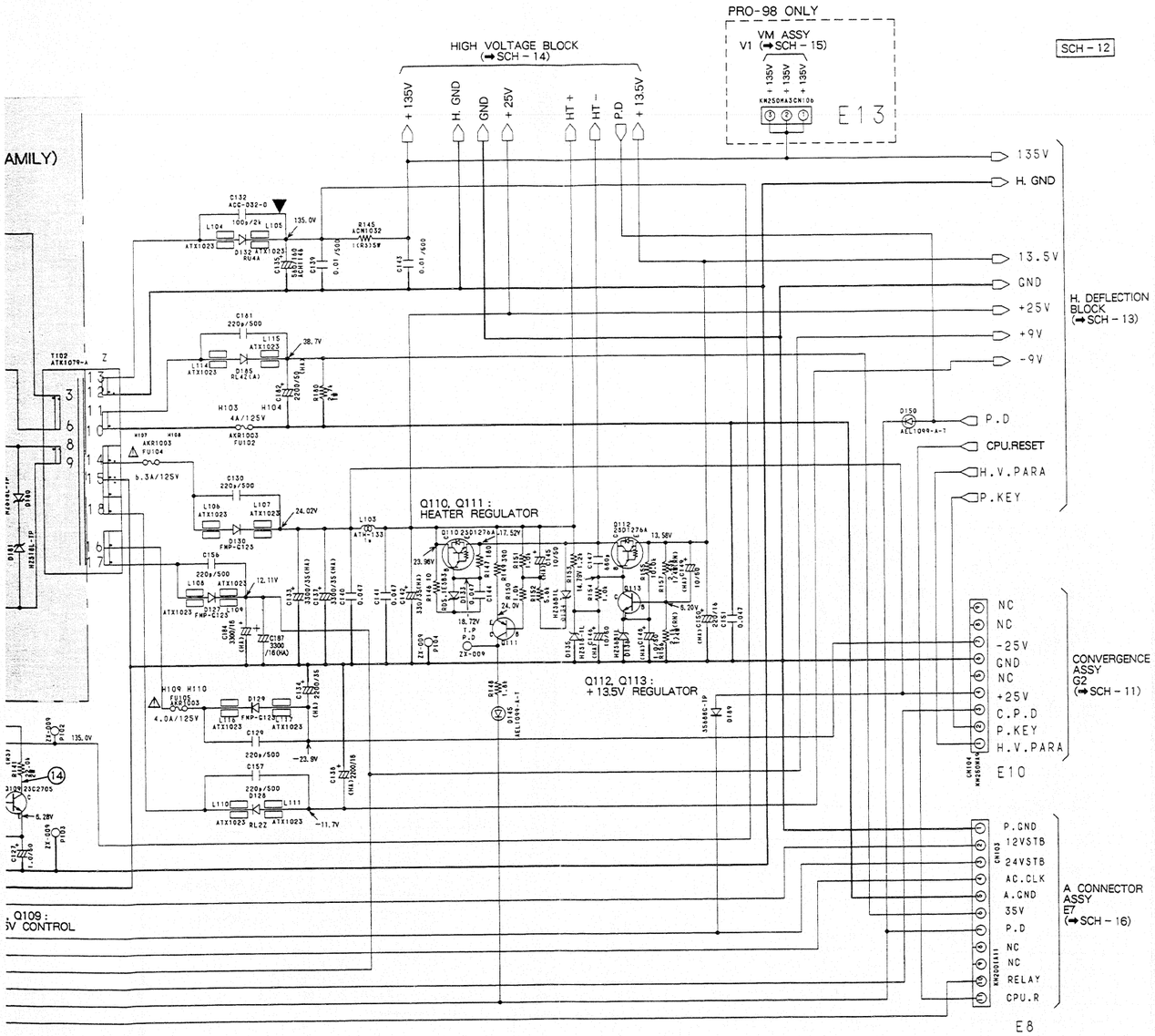
• Waveformes
SUPPLY ASS
(SW POWER

• Input signal : Cc
• Picuture quality
• DC range (Unle

1 D106 Cathc
V range : 2(
H range : 2r

2 Q104 Drain
V range : 5(
H range : 1(

3 Q104 Sourc
V range : 5\
H range : 1(



AL OXIDE FILM RESISTER
IENT RESISTER
AL FILM RESISTER
IFLAMMABLE RESISTER
:S :CARBONFILM RESISTER

n pharentheses show the rated wattage.
pecified ones are of 1/4W.

.Unspecified ones are of .

ecified ones are of F
ity
Voltage(:A.C , No mark:D.C)
ed ones are of 50V

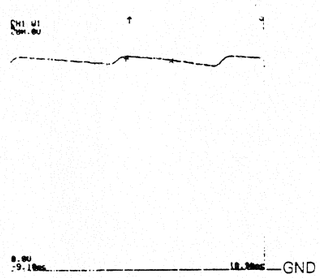
POWER SUPPLY ASSY (1/3), POWER SW ASSY

SCH-12

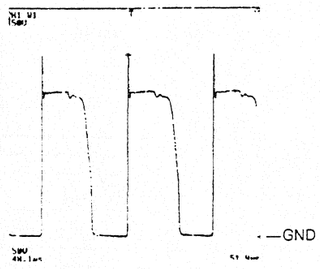
• Waveformes at POWER SUPPLY ASSY (SW POWER SUPPLY BLOCK)

- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

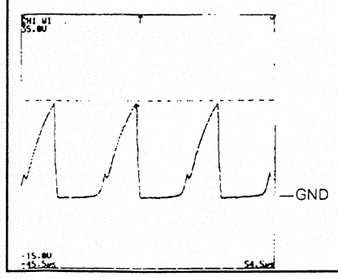
(1) D106 Cathode
V range : 20V/div.
H range : 2msec/div.



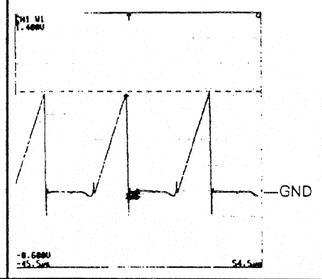
(2) Q104 Drain
V range : 50V/div.
H range : 10 μsec/div.



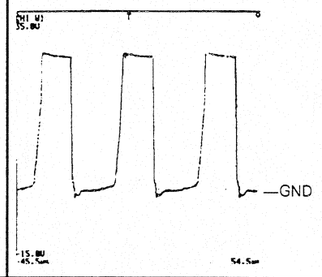
(3) Q104 Source
V range : 5V/div.
H range : 10 μsec/div.



(4) Q104 Gate
V range : 200mV/div.
H range : 10 μsec/div.

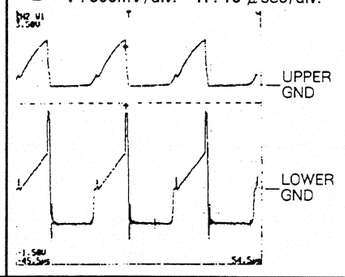


(5) Q106 Collector
V range : 5V/div.
H range : 10 μsec/div.



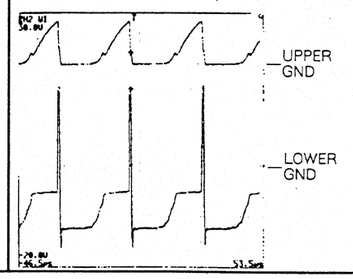
(6) Lower : Q106 Base
V : 500mV/div. H : 10 μsec/div.

(3) Upper : Q104 Source
V : 10V/div. H : 10 μsec/div.



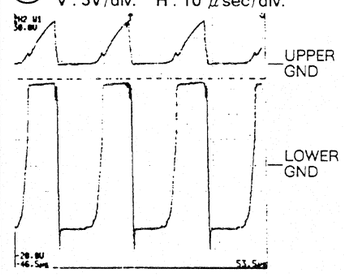
(7) Lower : Q107 Collector
V : 5V/div. H : 10 μsec/div.

(3) Upper : Q104 Source
V : 10V/div. H : 10 μsec/div.



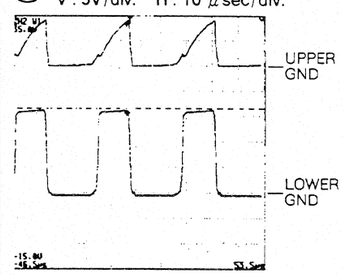
(3) Upper : Q104 Source
V : 10V/div. H : 10 μsec/div.

(8) Lower : Q107 Base
V : 5V/div. H : 10 μsec/div.



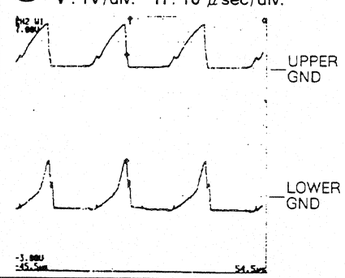
(3) Upper : Q104 Source
V : 10V/div. H : 10 μsec/div.

(9) Lower : Q108 Base
V : 5V/div. H : 10 μsec/div.



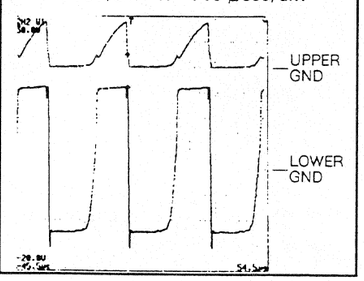
(3) Upper : Q104 Source
V : 10V/div. H : 10 μsec/div.

(10) Lower : Q108 Base
V : 1V/div. H : 10 μsec/div.



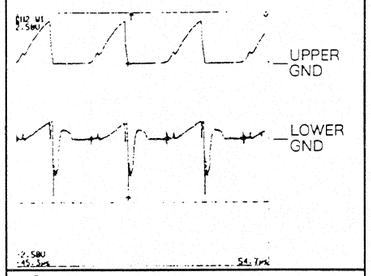
(3) Upper : Q104 Source
V : 10V/div. H : 10 μsec/div.

(11) Lower : Q107 Emitter
V : 5V/div. H : 10 μsec/div.



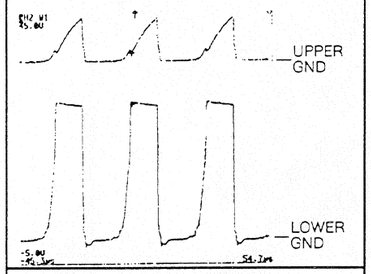
(3) Upper : Q104 Source
V : 10V/div. H : 10 μsec/div.

(12) Lower : Q105 Base
V : 500mV/div. H : 10 μsec/div.

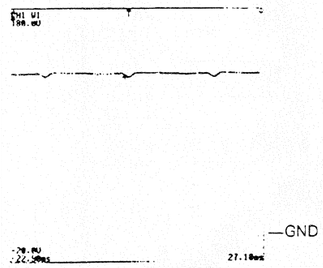


(3) Upper : Q104 Source
V : 10V/div. H : 10 μsec/div.

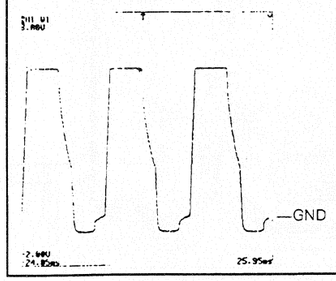
(13) Lower : Q105 Collector
V : 5V/div. H : 10 μsec/div.



(14) Q109 Collector
V range : 20V/div.
H range : 5msec/div.



(15) D103 Cathode
V range : 1V/div.
H range : 5msec/div.

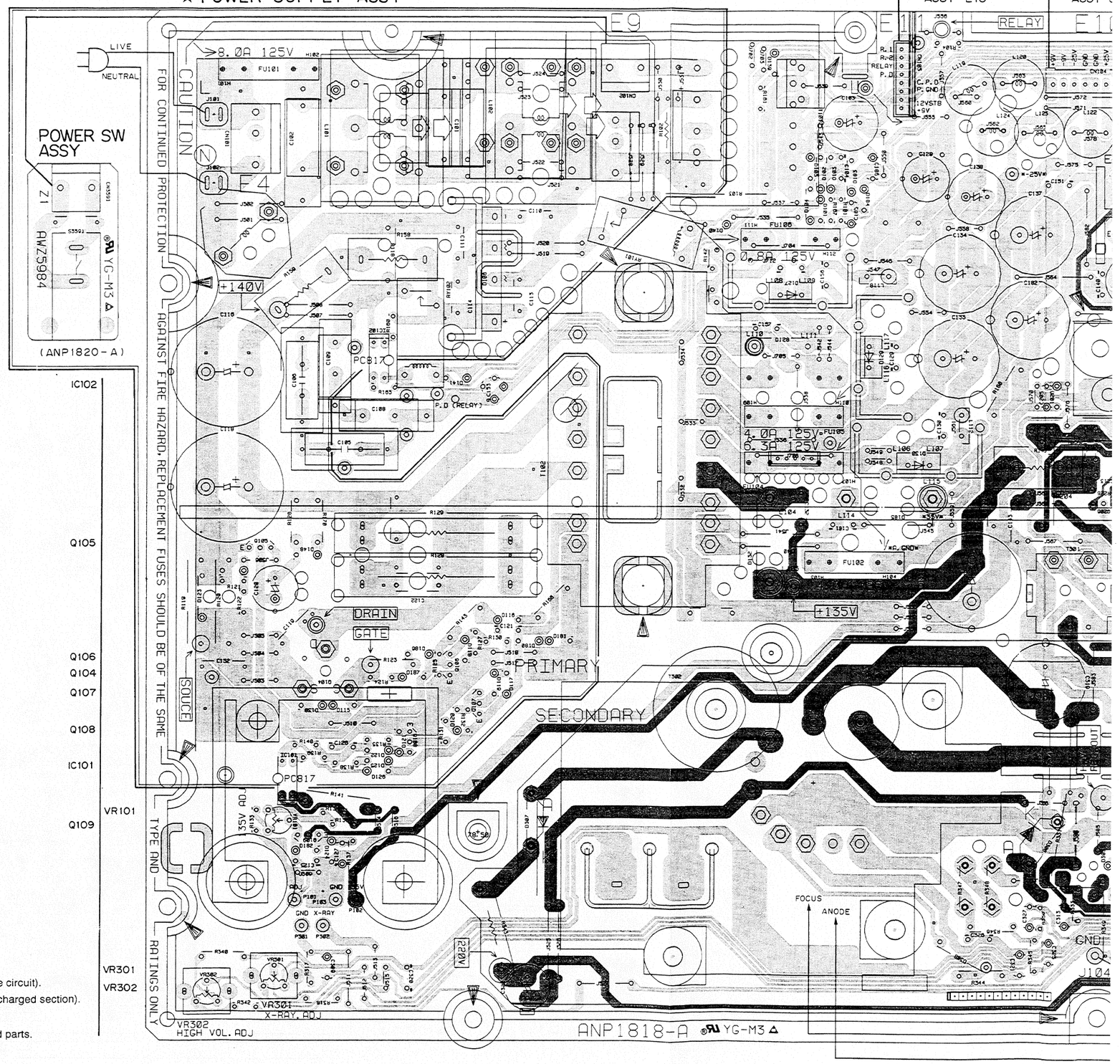


● This diagram is viewed from the mounted parts side.

mark shows the charged section (Power supply primary side circuit).
mark shows a high voltage generation point (excepting the charged section).

• Parts marked ☆ are important parts which relate to X-ray radiation.
If any of these parts need to replaced. Always replace with specified parts.

☆ POWER SUPPLY ASSY



☆ POWER SUPPLY ASSY

PCB－5

RELAY DRIVE ASSY E13

CONVERGENCE ASSY G2

A CONNECTOR ASSY E7

A CONNECTOR ASSY E6

B.CRT DRIVE ASSY P3

VM ASSY V1

H. DY

CRT ASSY R,G,B

LIVE

NEUTRAL

CAUTION

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.

ANP1818-A YG-M3

PRIMARY

SECONDARY

+140V

+135V

GND

DRAIN

GATE

SOURCE

35V ADJ

X-RAY ADJ

VR301

VR302 HIGH VOL. ADJ

FOCUS

ANODE

H. DEF C. PULSE

H. DEF REG. OUT

H. V C. PULSE

D. FOCUS OUT

HV. PARA

AWV-1482-A

Q302
Q301
Q112
Q110
Q113
Q201
Q111
Q202
Q205
Q208
Q204
Q206
Q307
Q203
IC201
Q309
Q209
Q304
Q308
Q210
Q303
IC301
Q305
Q306
VR1 FOCUS VR
Q105
Q106
Q104
Q107
Q108
IC101
VR101
Q109
VR301
VR302

E1 E2 E3 [R] [G] [B]

E6 DEFLECTION HIGH VOLTAGE

81

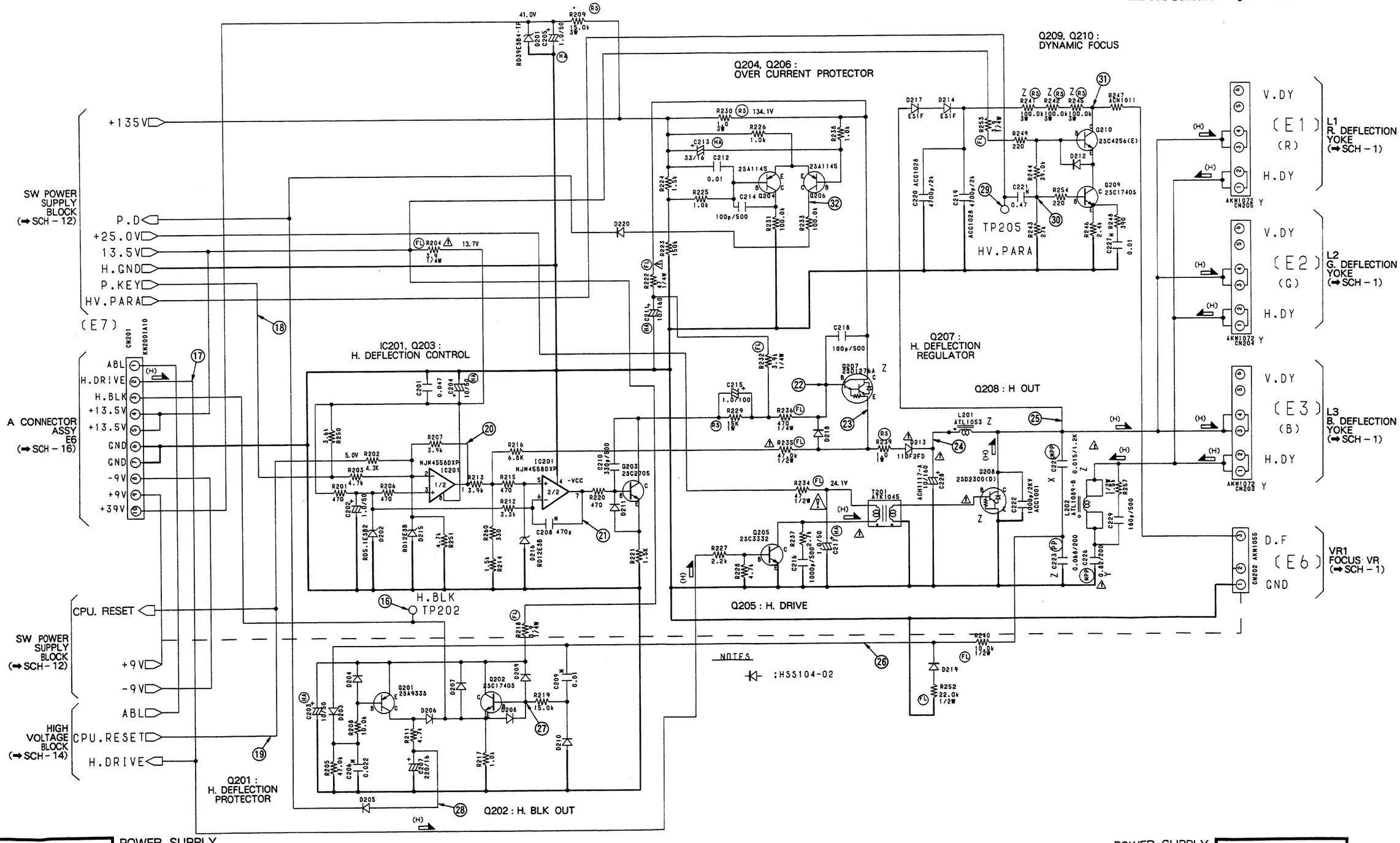
7.13 POWER SUPPLY ASSY (2/3)

☆POWER SUPPLY ASSY (AWV1499 : SD-P5185-K AND 83 FAMILY)
(AWV1500 : PRO-98)

SCH – 13

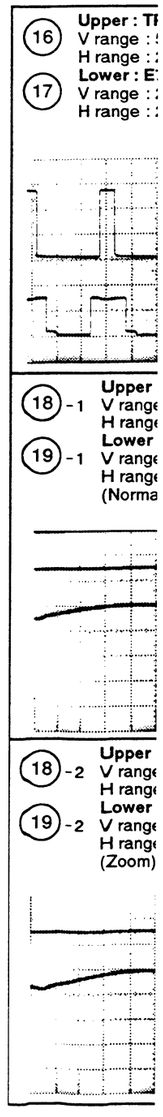
• H. DEFLECTION BLOCK

(H) : H. Deflection signal route



• Waveformes
SUPPLY AS
(H. DEFLEC

• Input signal : C
• Picuture quality
• DC range (Unl

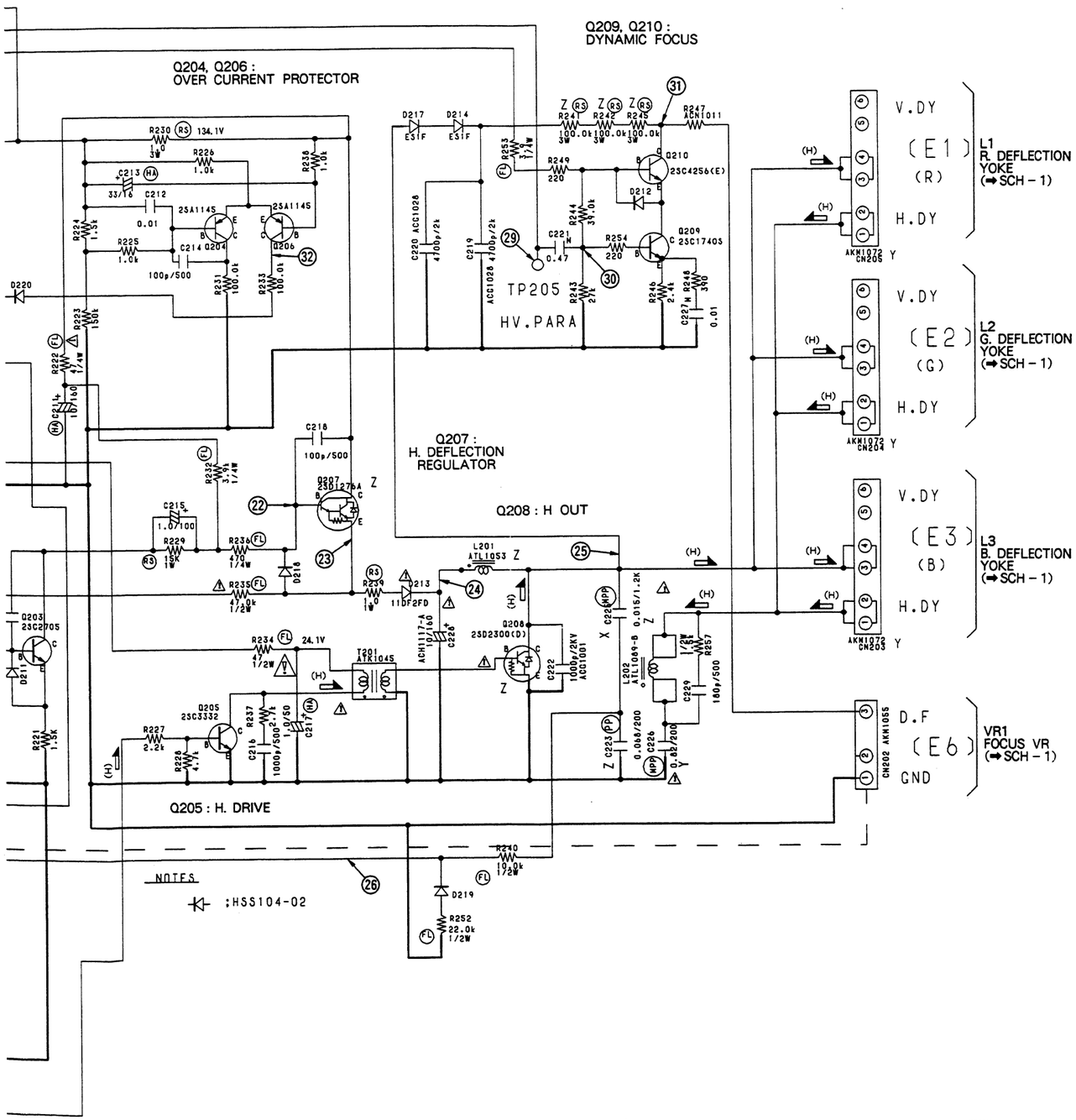


☆POWER SUPPLY ASSY (AWV1499 : SD-P5185-K AND 83 FAMILY)
(AWV1500 : PRO-98)

SCH – 13

• H. DEFLECTION BLOCK

(H) : H. Deflection signal route



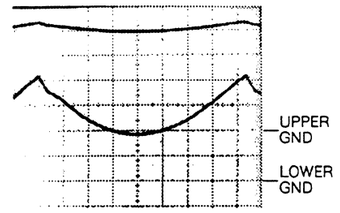
POWER SUPPLY
ASSY (2/3)

SCH-13

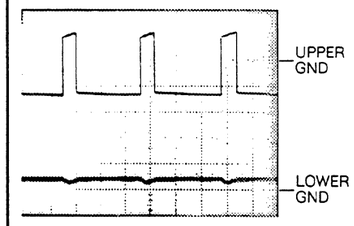
• Waveformes at POWER SUPPLY ASSY (H. DEFLECTION BLOCK)

- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

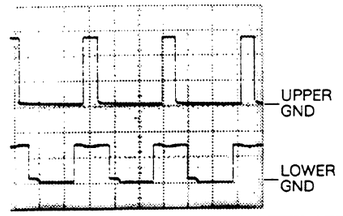
20 **Upper : IC201 Pin1**
V range : 2V/div.
H range : 2msec/div.
21 **Lower : IC201 Pin 7**
V range : 2V/div.
H range : 2msec/div.



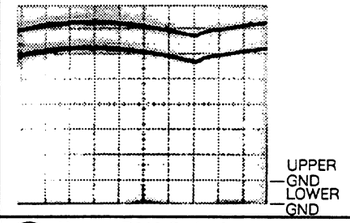
26 **Upper : D219 Cathode**
V range : 20V/div.
H range : 20 μsec/div.
28 **Lower : D205 Anode**
V range : 0.2V/div.
H range : 20 μsec/div.



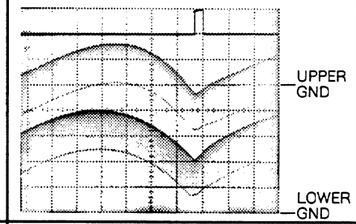
16 **Upper : TP202 (H. BLK)**
V range : 5V/div.
H range : 20 μsec/div.
17 **Lower : E7 Pin 2**
V range : 2V/div.
H range : 20 μsec/div.



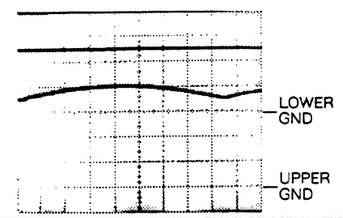
22 **Upper : Q207 Base**
V range : 20V/div.
H range : 2msec/div.
23 **Lower : Q207 Emitter**
V range : 20V/div.
H range : 2msec/div.



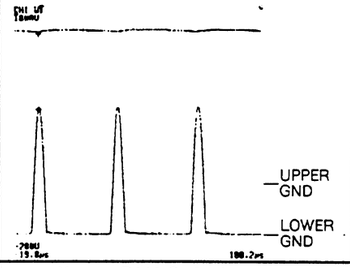
29 **Upper : TP205 (HV. PARA)**
V range : 2V/div.
H range : 2msec/div.
30 **Lower : Between C221 and R254**
V range : 2V/div.
H range : 2msec/div.



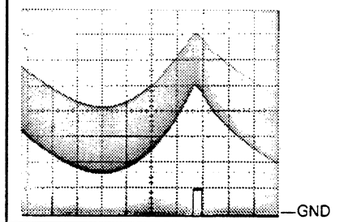
18 -1 **Upper : Between R203 and R250**
V range : 2V/div.
H range : 2msec/div.
19 -1 **Lower : Lead wire of R202**
V range : 2V/div.
H range : 2msec/div.
(Normal)



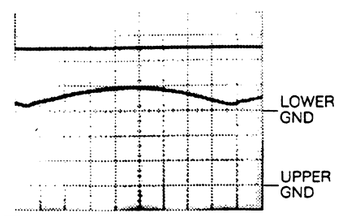
24 **Upper : D213 Cathode**
V : 20V/div. H : 20 μsec/div.
25 **Lower : Q208 Collector**
V : 200V/div. H : 20 μsec/div.



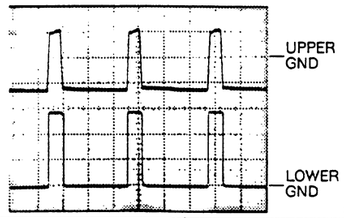
31 **Q210 Collector**
V range : 100V/div.
H range : 2msec/div.



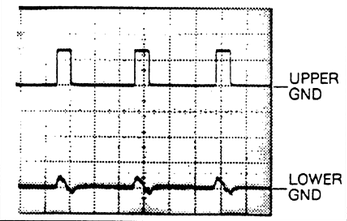
18 -2 **Upper : Between R203 and R250**
V range : 2V/div.
H range : 2msec/div.
19 -2 **Lower : Lead wire of R202**
V range : 2V/div.
H range : 2msec/div.
(Zoom)



26 **Upper : D219 Cathode**
V range : 20V/div.
H range : 20 μsec/div.
27 **Lower : Q202 Base**
V range : 5V/div.
H range : 20 μsec/div.



16 **Upper : TP202 (H. BLK)**
V range : 10V/div.
H range : 20 μsec/div.
32 **Lower : Q206 Collector**
V range : 0.5V/div.
H range : 20 μsec/div.



7.14 POWER SUPPLY ASSY (3/3)

☆POWER SUPPLY ASSY (AWV1499 : SD-P5185-K AND 83 FAMILY)
(AWV1500 : PRO-98)

SCH – 14

• HIGH VOLTAGE BLOCK

B. CRT DRIVE ASSY
P3 (➡SCH – 15)
(E5)

CN301 KM2SCNASR

Q305, Q306 : OVER CURRENT PROTECTOR

Q308 : HIGH VOLTAGE REGULATOR

Q309 : HIGH VOLTAGE DET.

SW POWER SUPPLY BLOCK (➡SCH – 12)
+135V
H.T+
H.T-
P.D
+13.5V
+25V
H.GND
GND

H. DEFLECTION BLOCK (➡SCH – 13)
H.DRIVE
A.B.L
CPU.RST

Q301, Q302 : X-RAY PROTECTOR

Q307 : HIGH VOLTAGE DRIVE

IC301, Q303, Q304 : HIGH VOLTAGE CONTROL

J103 ANODE — CRT ASSY R, G, B (➡SCH – 15)

J105 FOCUS — FOCUS VR (➡SCH – 1)

J104 GND — CRT ASSY R, G, B (➡SCH – 15)

TP301 GND

TP302 X-LAY

HIGH VOLT. ADJ.

NOTES

1.RESISTORS
Indicated in ,1/4W,1/8W, 5% tolarance unless otherwise noted
K:K ,M:M .

2.CAPACITORS
Indicated in capacity (F)/voltage (V) unless otherwise noted p:pF.
Indication without voltage is 50V except electrolytic capacitor.
:HSS104-02

3. F.B.T
AWV1482-A ; Used ATK1094-A
AWV1497-A ; Used ATK1090-A

SCH-14 POWER SUPPLY ASSY (3/3)

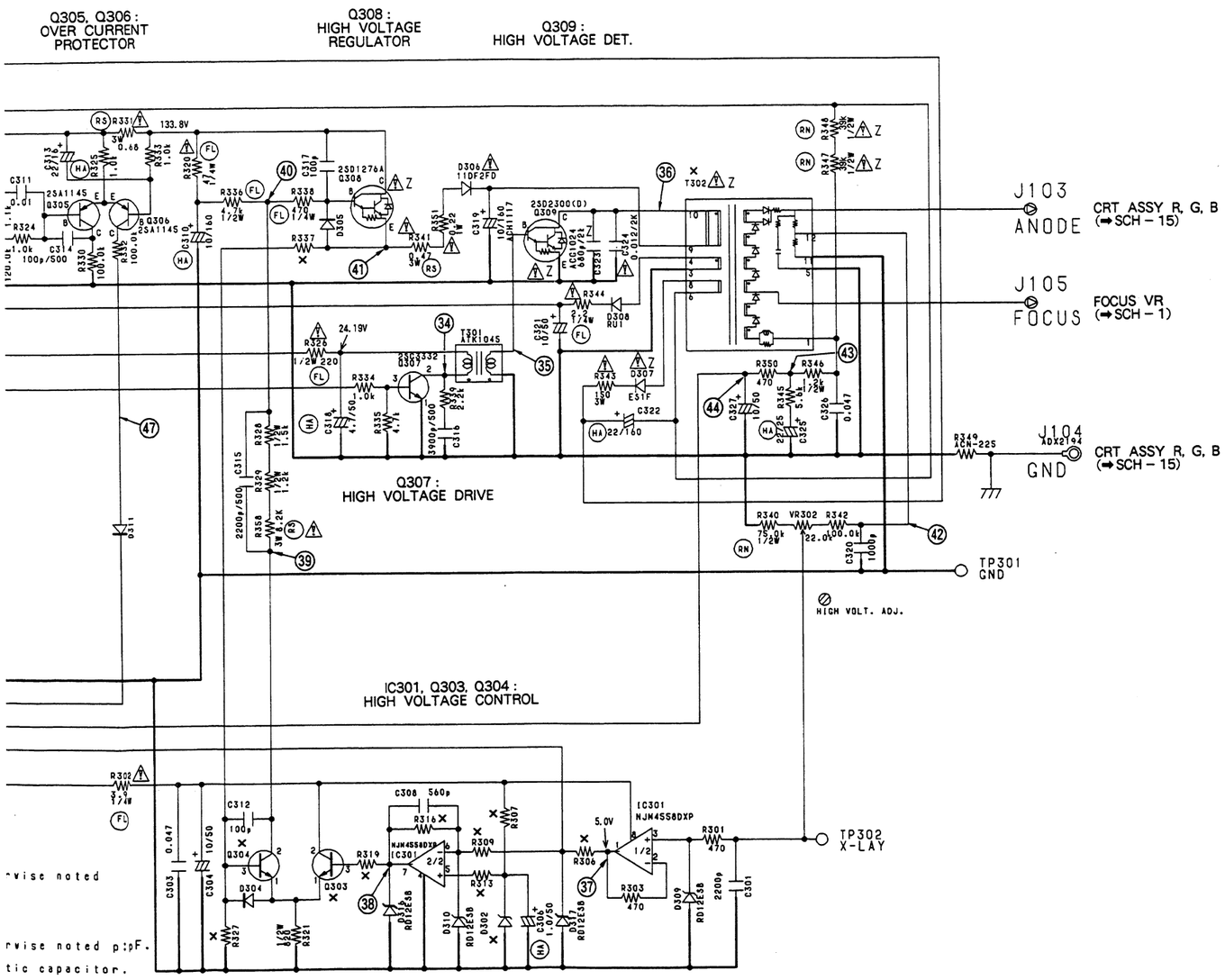
POWER SUPPLY ASSY (3/3) SCH-14

• Wave
SUPF
(HIGH
• Input si
• Picture
• DC rang

☆POWER SUPPLY ASSY (AWV1499 : SD-P5185-K AND 83 FAMILY) (AWV1500 : PRO-98)

SCH – 14

• HIGH VOLTAGE BLOCK



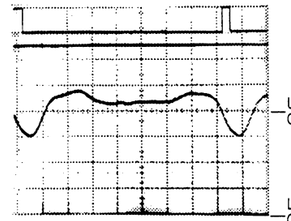
POWER SUPPLY ASSY (3/3)

SCH-14

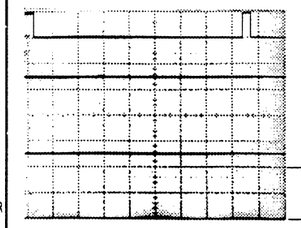
• Waveformes at POWER SUPPLY ASSY (HIGH VOLTAGE BLOCK)

- Input signal : Color bar
- Picuture quality : standard
- DC range (Unless otherwise noted.)

(37) Upper : IC301 Pin 1
V range : 2V/div.
H range : 2msec/div.
(39) Lower : Q304 Collector
V range : 20V/div.
H range : 2msec/div.

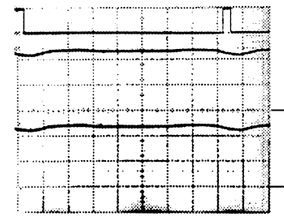


(45) Upper : C321 + side
V range : 10V/div.
H range : 2msec/div.
(46) Lower : TP. X-RAY ADJ
V range : 2V/div.
H range : 2msec/div.

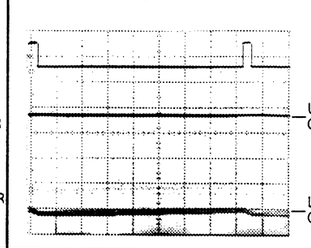


(33) Upper : Lead wire of R334
V range : 1V/div.
H range : 20 μsec/div.
(34) Lower : Q307 Collector
V range : 20V/div.
H range : 20 μsec/div.

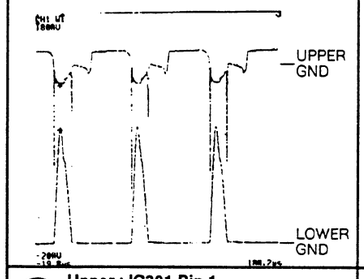
(40) Upper : Between R336 and R338
V range : 50V/div.
H range : 2msec/div.
(41) Lower : Q308 Collector
V range : 50V/div.
H range : 2msec/div.



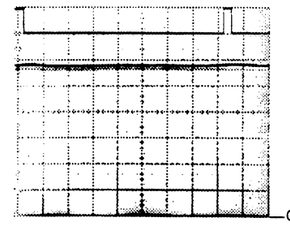
(47) -1 Upper : D311 Anode
V range : 1V/div.
H range : 2msec/div.
(48) -1 Lower : D312 Anode
V range : 0.1V/div.
H range : 2msec/div.



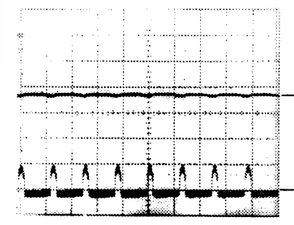
(35) Upper : Q309 Base
V : 2V/div. H : 20 μsec/div.
(36) Lower : Q309 Collector
V : 200V/div. H : 20 μsec/div.



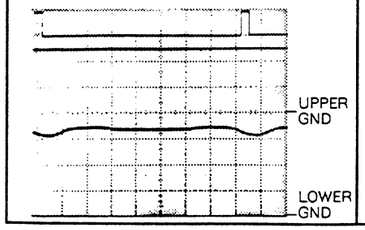
(42) T302 Pin 12
V range : 2V/div.
H range : 2msec/div.



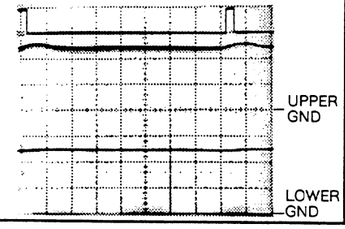
(47) -2 Upper : D311 Anode
V range : 1V/div.
H range : 50 μsec/div.
(48) -2 Lower : D312 Anode
V range : 0.1V/div.
H range : 50 μsec/div.



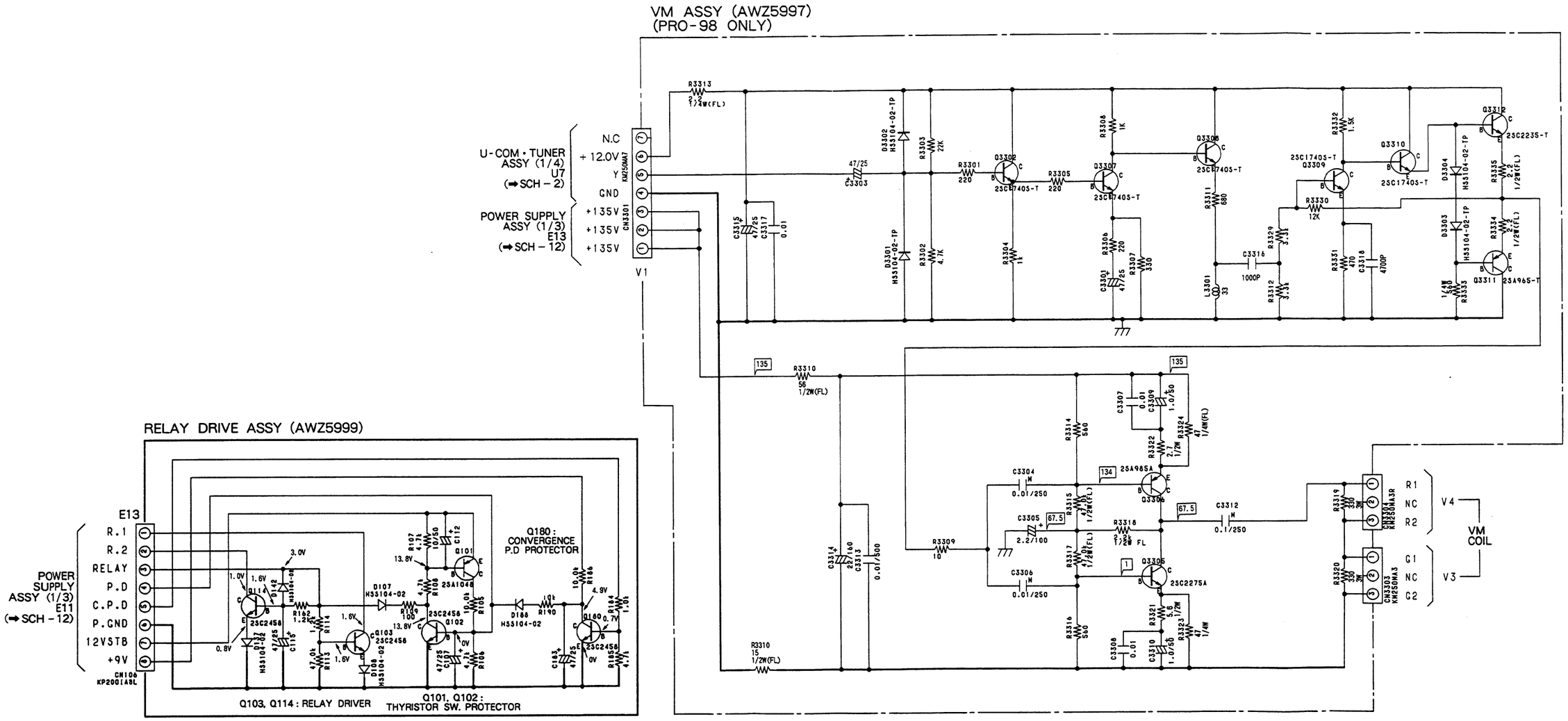
(37) Upper : IC301 Pin 1
V range : 2V/div.
H range : 2msec/div.
(38) Lower : IC301 Pin 7
V range : 2V/div.
H range : 2msec/div.



(43) Upper : Between R346 and R350
V range : 5V/div.
H range : 2msec/div.
(44) Lower : C327 + side
V range : 5V/div.
H range : 2msec/div.



7.15 VM, RELAY DRIVE ASSY, R,G,B CRT DRIVE ASSEMBLIES



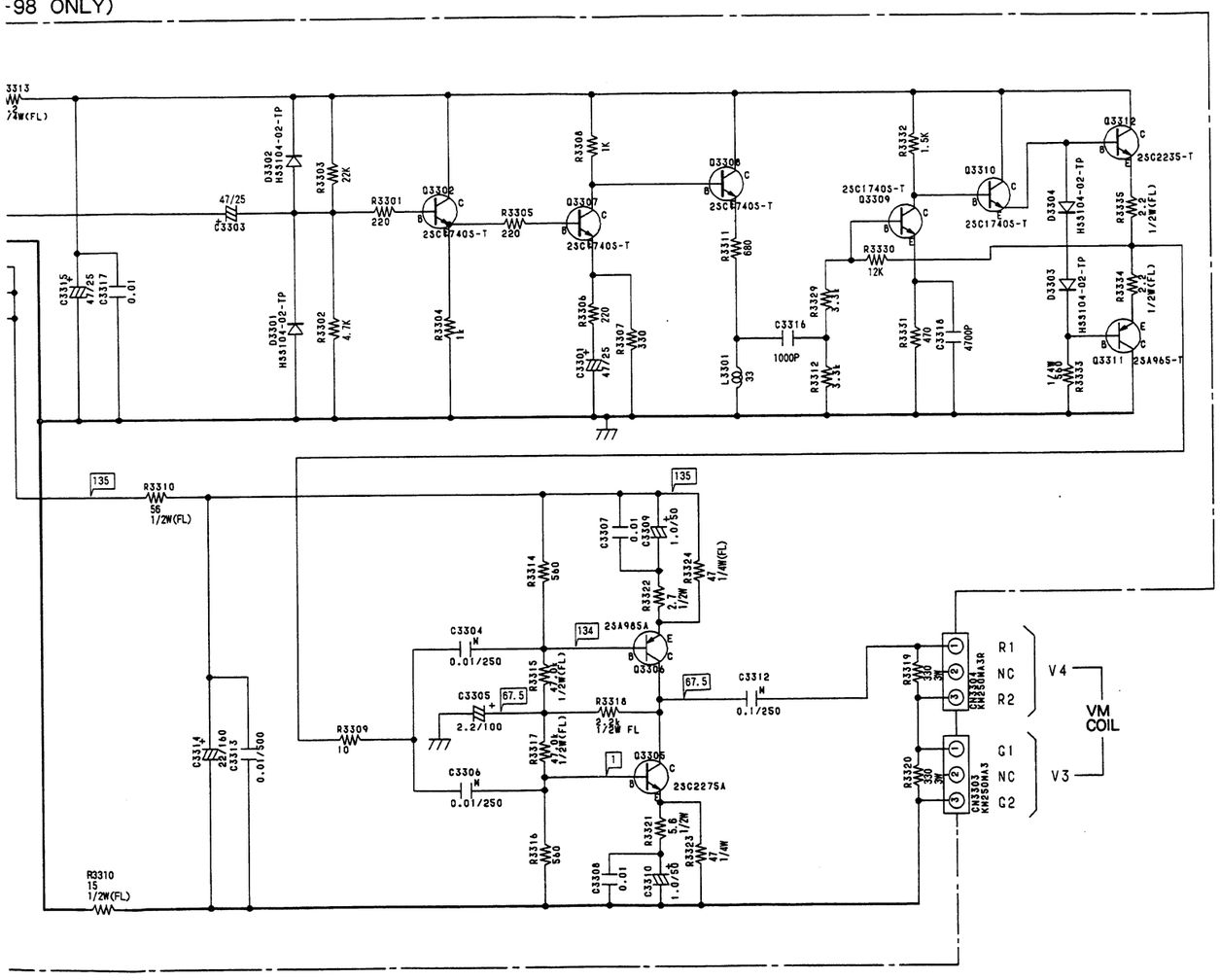
Note: Diode HSS104-02 unless otherwise noted.
Resister indicated in ,1/4W,1/8W +5%tolerance
unless otherwise noted. k:k . M:M .
Capacitor indicated in Capacity(F)/Voltage(V)
unless otherwise noted. p:pF.
Indication without voltage is 50V except Electrolytic capacitor.

[*1] : DC voltage (V) is me
input signal.

SCH-15

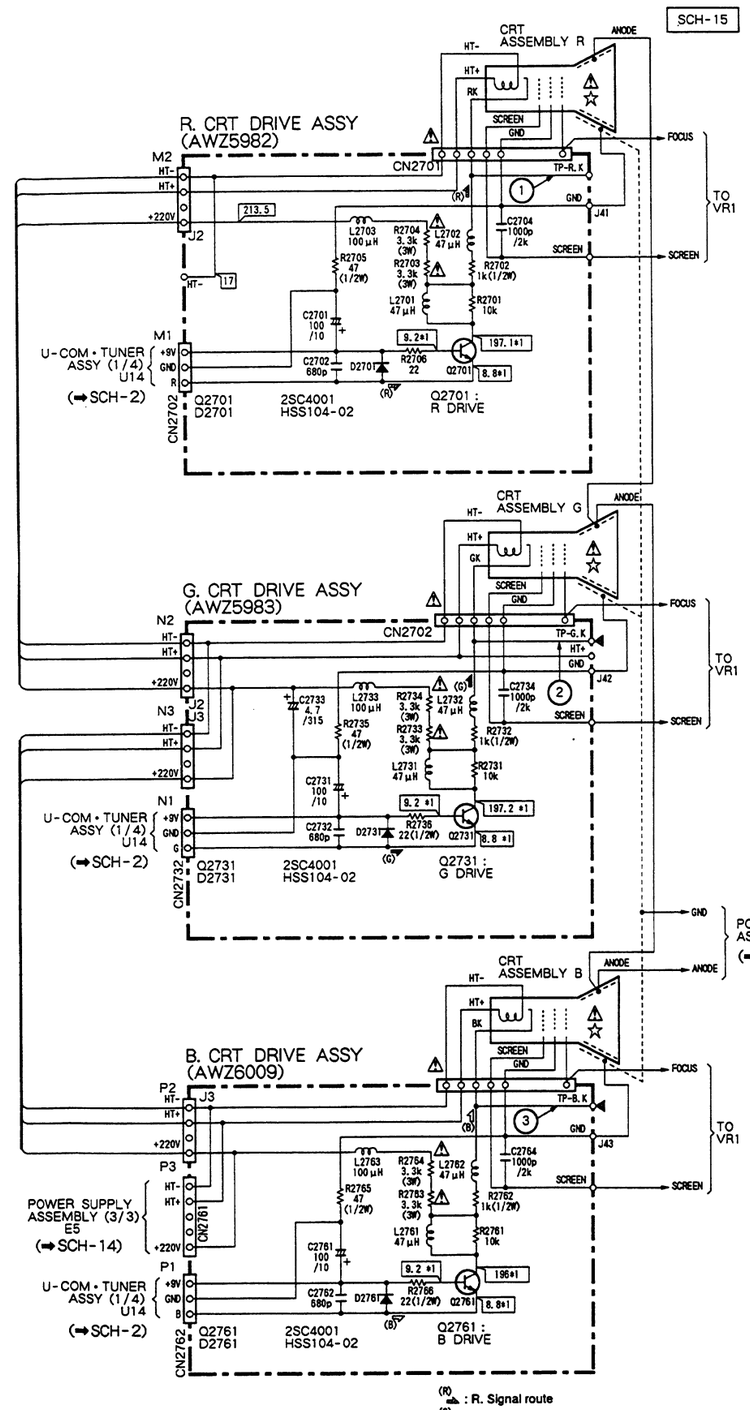
VM ASSY, RELAY ASSY,
R. CRT DRIVE ASSY,
G. CRT DRIVE ASSY,
B. CRT DRIVE ASSY

SSY (AWZ5997)
-98 ONLY)



Note: Diode HSS104-02 unless otherwise noted.
Resister indicated in .1/4W,1/8W +5% tolerance
unless otherwise noted. k:k . M:M .
Capacitor indicated in Capacity(F)/Voltage(V)
unless otherwise noted. p:pF.
Indication without voltage is 50V except Electrolytic capacitor.

SCH-15



(R) : R. Signal route
(G) : G. Signal route
(B) : B. Signal route

±1 : DC voltage (V) is measured with the digital voltmeter at no input signal.

● **Waveformes**
• Input signal : Color bar
• Picture quality : standard
• Range : DC range (without notice)

A

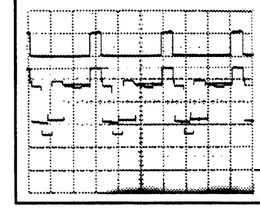
17 **Upper: U1 pin H. BLK**
(U-COM•TUNER ASSY)
V range : 10V/div.
H range : 20 µsec/div.

1 **Lower: TP-RK**
V range : 50V/div.
H range : 20 µsec/div.

B

17 **Upper: U1 pin H. BLK**
(U-COM•TUNER ASSY)
V range : 10V/div.
H range : 20 µsec/div.

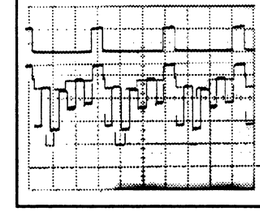
2 **Lower: TP-GK**
V range : 50V/div.
H range : 20 µsec/div.



C

17 **Upper: U6 pin H. BLK**
(U-COM•TUNER ASSY)
V range : 10V/div.
H range : 20 µsec/div.

3 **Lower: TP-BK**
V range : 50V/div.
H range : 20 µsec/div.

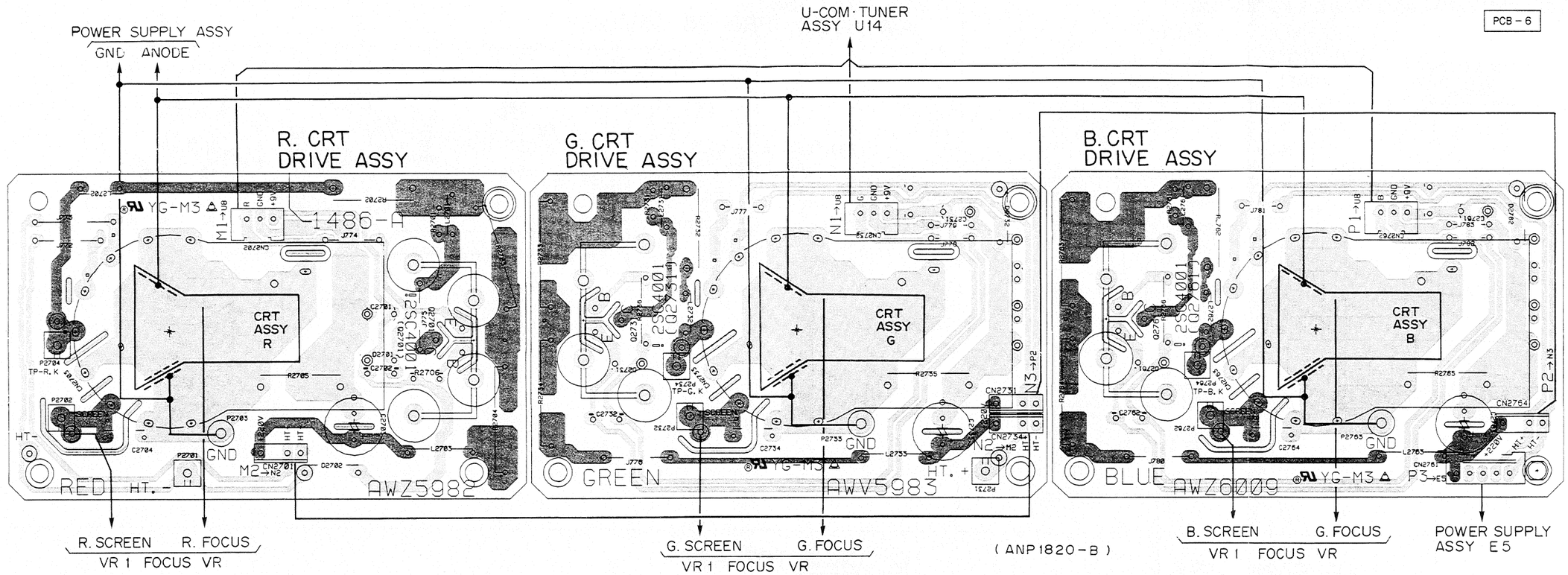


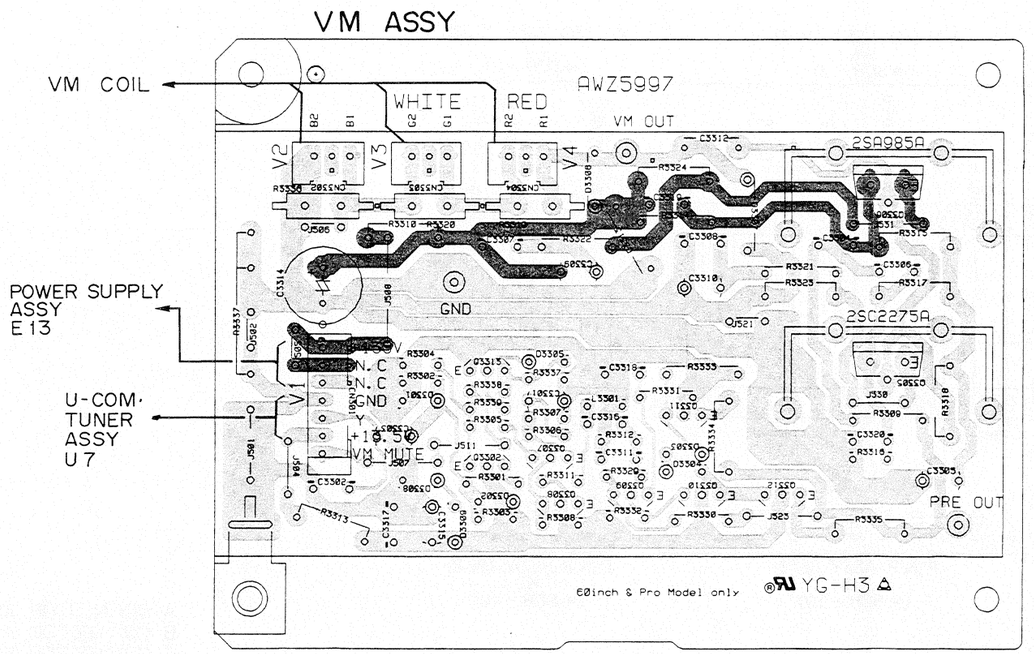
D

VM ASSY, RELAY ASSY,
R. CRT DRIVE ASSY,
G. CRT DRIVE ASSY,
B. CRT DRIVE ASSY

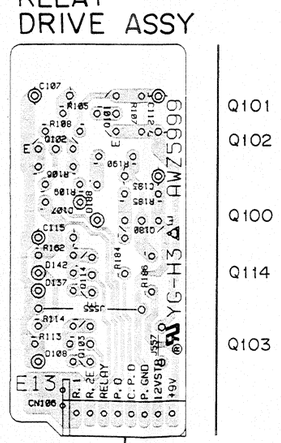
SCH-15

PCB – 6





Q3306
Q3305
Q3313
Q3311
Q3307
Q3302
Q3312
Q3310
Q3309
Q3308



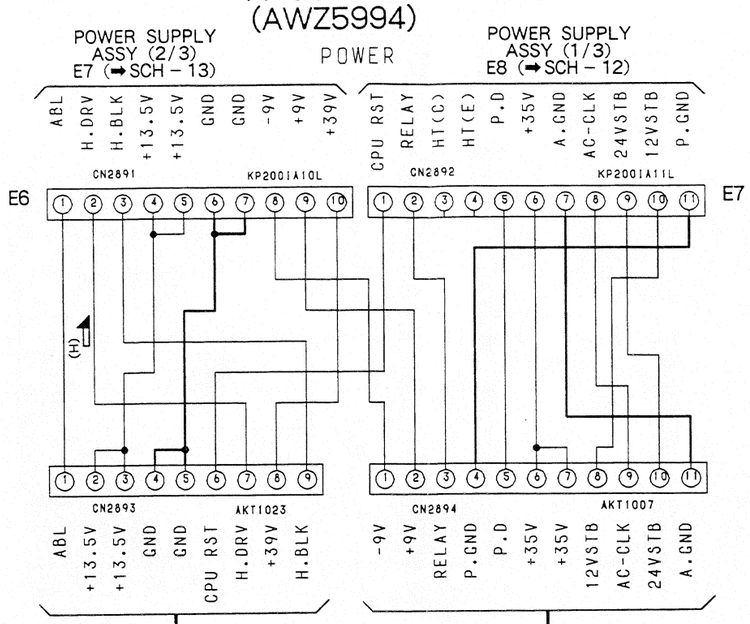
Q101
Q102
Q100
Q114
Q103

(ANP1822-A)

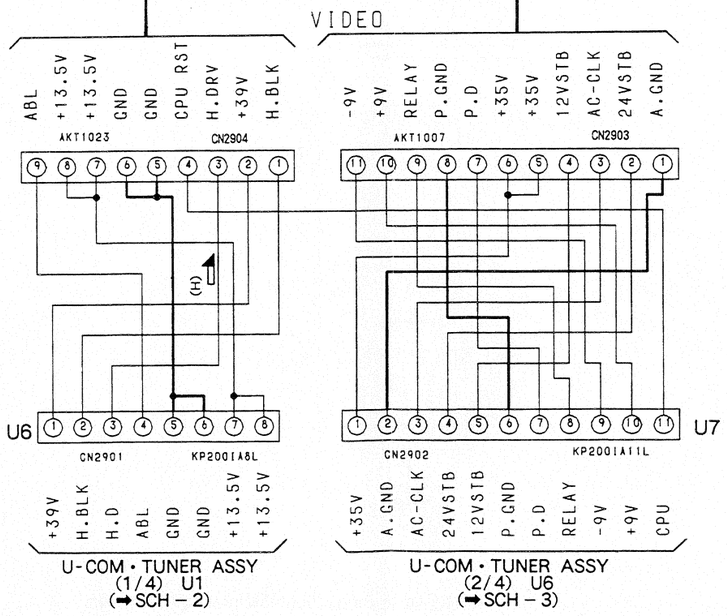
- This diagram is viewed from the mounted parts side.
- mark shows a high voltage generation point (excepting the charged section).

7.16 A, B, C CONNECTOR AND PRO S.G ASSEMBLIES

A CONNECTOR ASSY (AWZ5994)



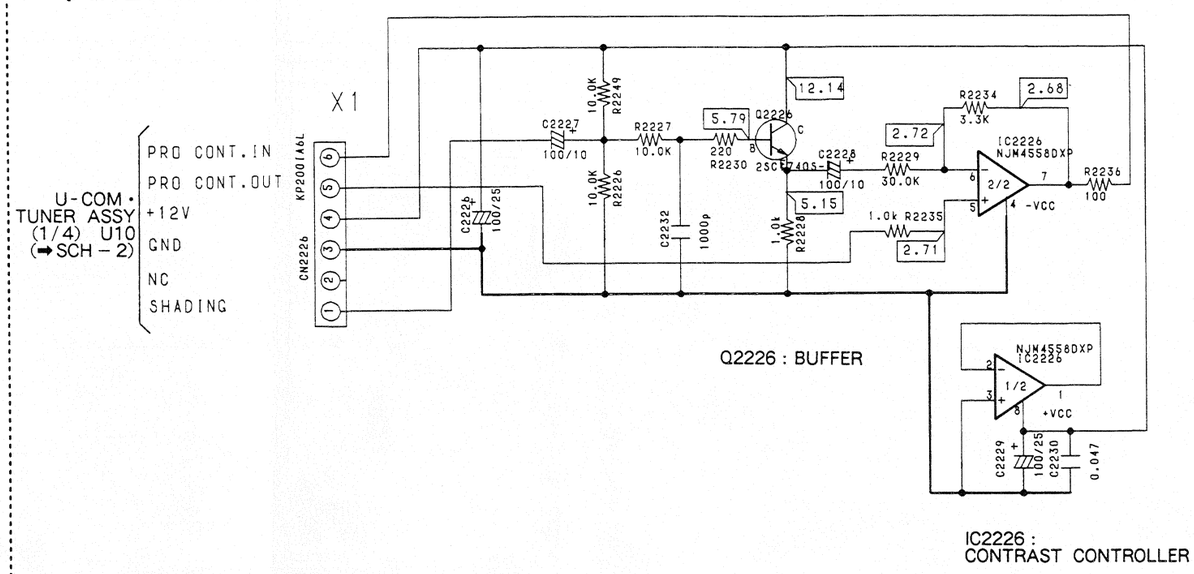
B CONNECTOR ASSY (AWZ5995)



PRO S.G ASSY (AWZ6005) (PRO-98 ONLY)

(H) : H. Deflection signal route

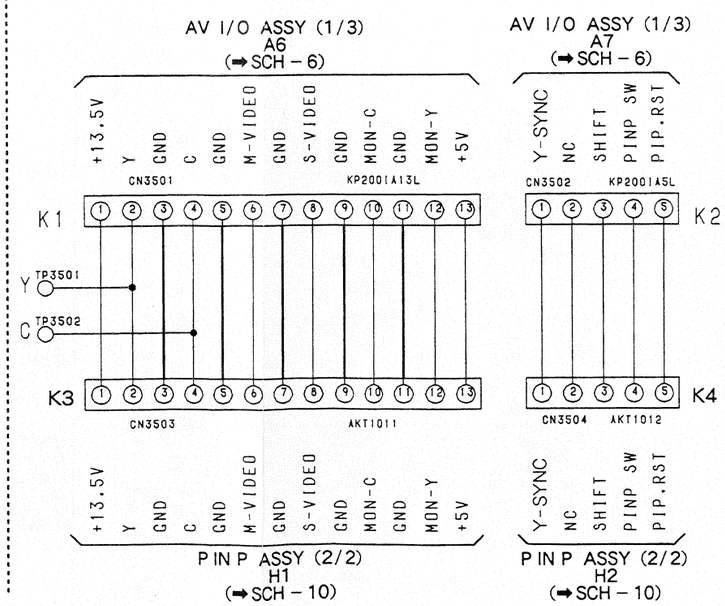
SCH – 16



Q2226 : BUFFER

IC2226 : CONTRAST CONTROLLER

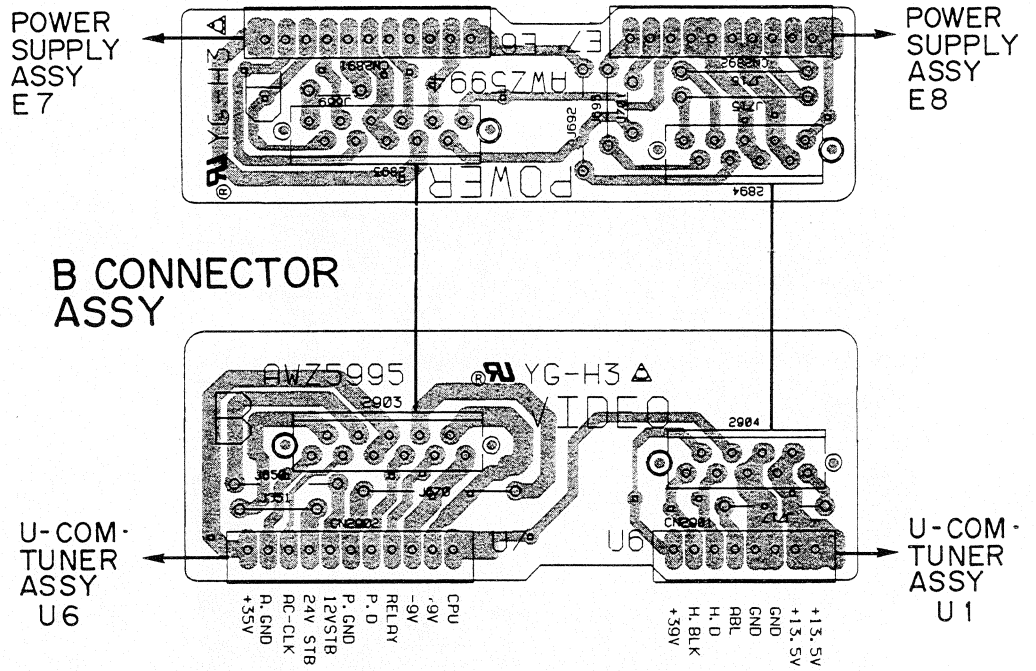
C CONNECTOR ASSY (AWZ5996)



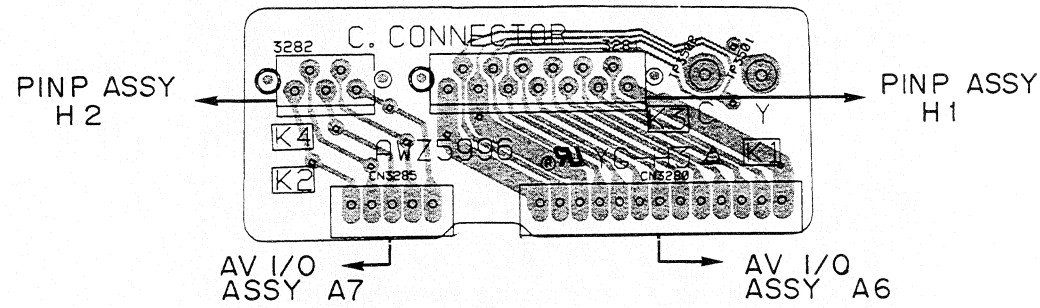
A CONNECTOR ASSY,
B CONNECTOR ASSY,
C CONNECTOR ASSY,
PRO S.G ASSY
SCH-16

PCB – 7

A CONNECTOR ASSY

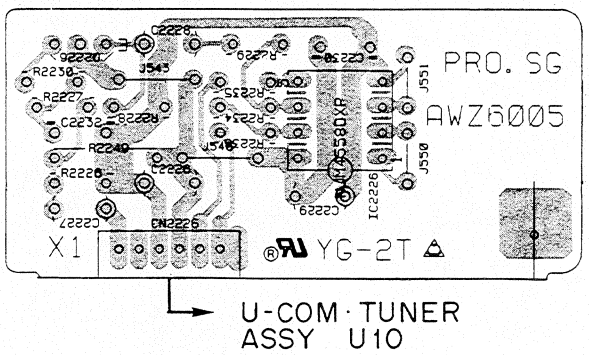


C CONNECTOR ASSY



(ANP1822 – A)

PRO S.G ASSY

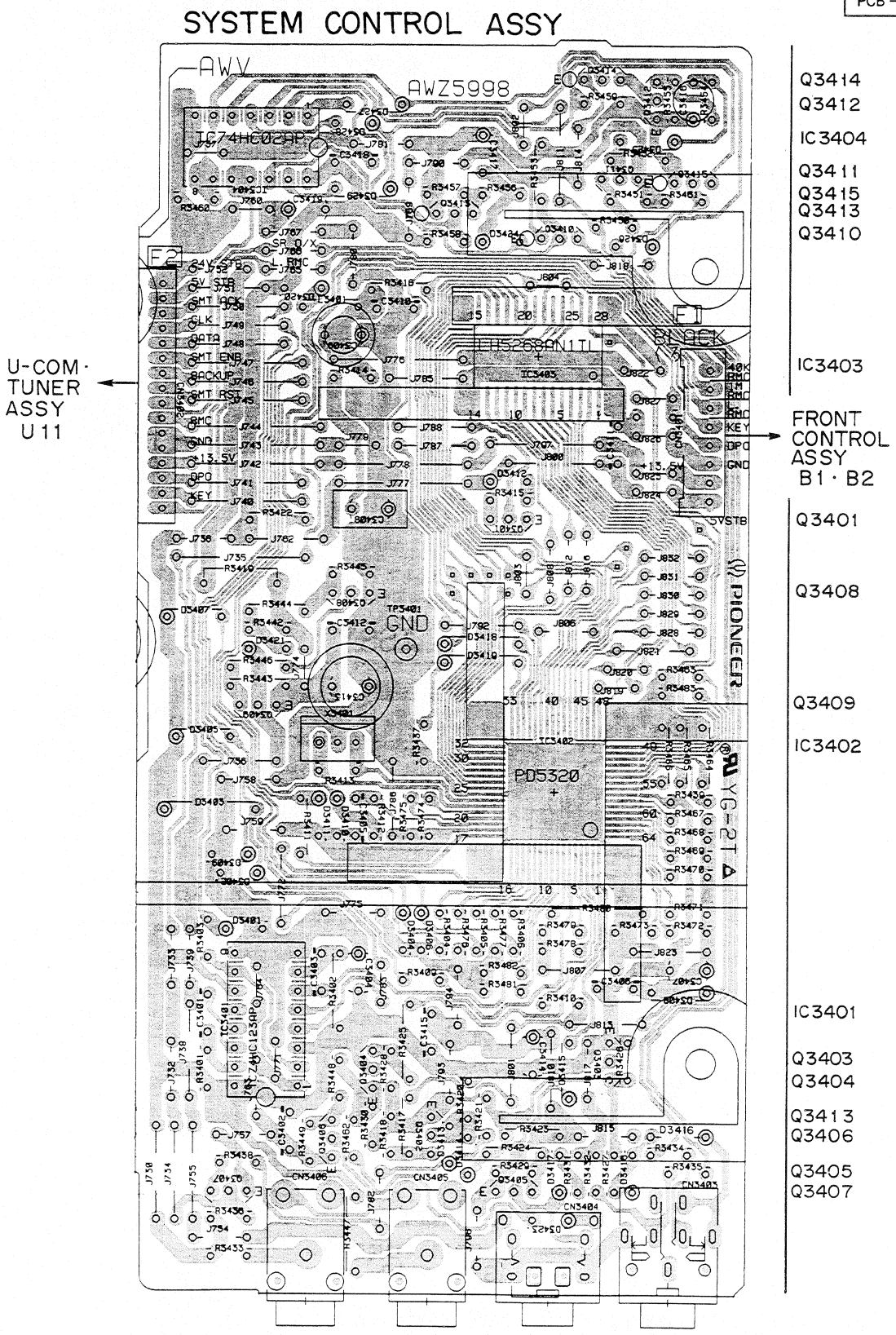


(ANP1823 – A)

● This diagram is viewed from the mounted parts side.

7.17 SYSTEM CONTROL ASSY (SD-P5185-K AND PRO-98 ONLY)

PCB – 8



(ANP1821-B)

● This diagram is viewed from the mounted parts side.

SYSTEM CONTROL ASSY (AWZ5998)

SCH – 17

IC3401 :
REMOTE CONTROL
SIGNAL DET.

IC3402
PD5320A

IC3402 :
PROGRAMABLE-U COM

Q3408, Q3409 : OVER CURRENT
PROTECT

Q3404 : MAIN REPEATER
BUFFER

Q3406 : MINI REPEATER
BUFFER

Q3405 :
SR OUT
DRIVER

IC3403 :
STATIC RAM

Q3402 : RMC MUTE

Q3403, Q3407 : RMC DRIVER

Q3415 :
RMC DRIVER

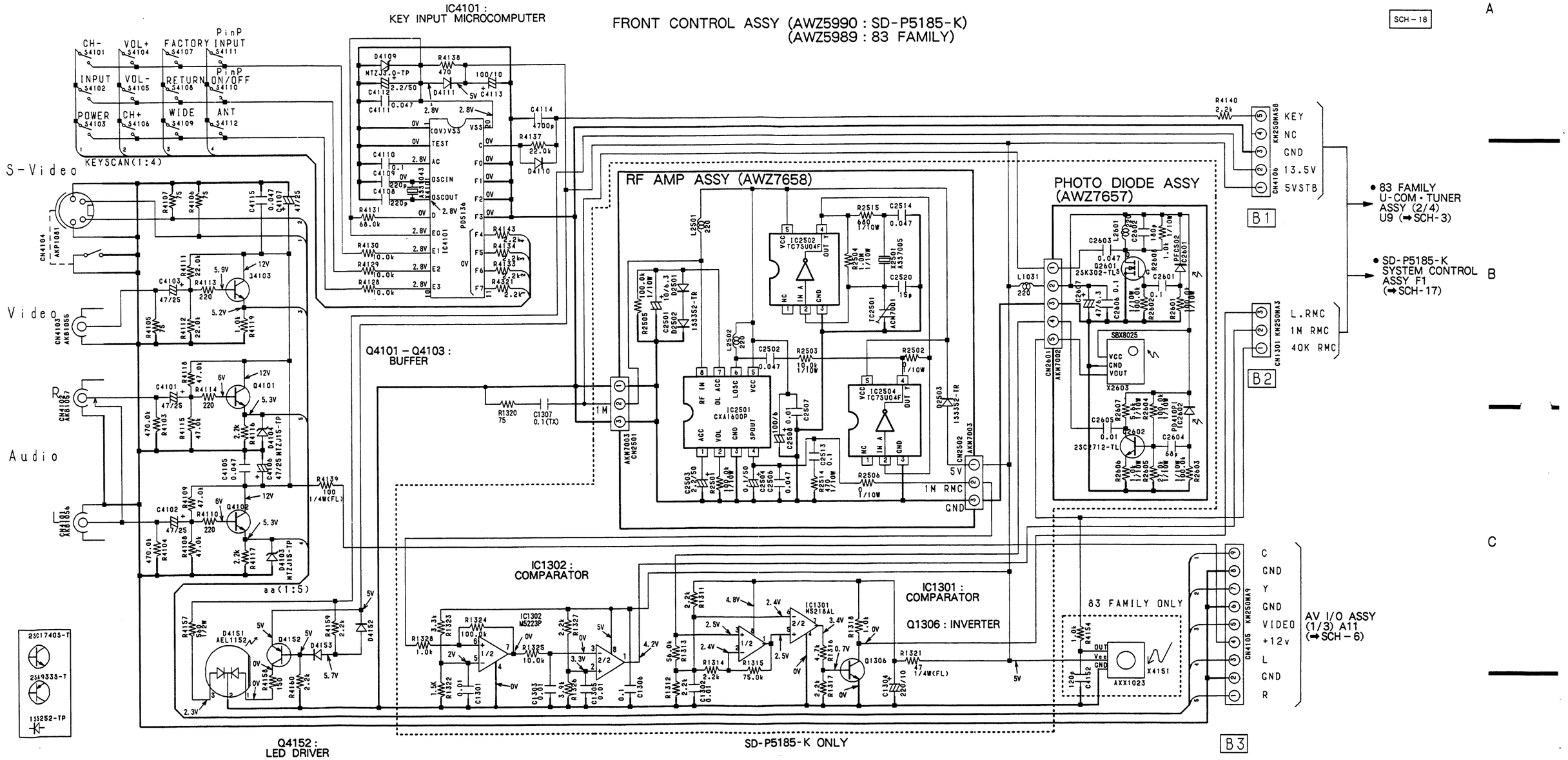
IC3404, Q3410 – Q3414 :
1MHz RMC DET.

FRONT
CONTROL
ASSY
B1 AND B2
• SD-P5185-K
(➡SCH – 18)
• PRO-98
(➡SCH – 19)

U-COM •
TUNER ASSY
(2/4) U11
(➡SCH – 3)

2SA933 or 2SA1048
2SC1740 or 2SC2458
MTZJ6.8 or RD6.8ESB
HSS104-02 or 1SS252

7.18 FRONT CONTROL, RF AMP AND PHOTO DIODE ASSEMBLIES (FOR SD-P5185-K AND 83 FAMILY)

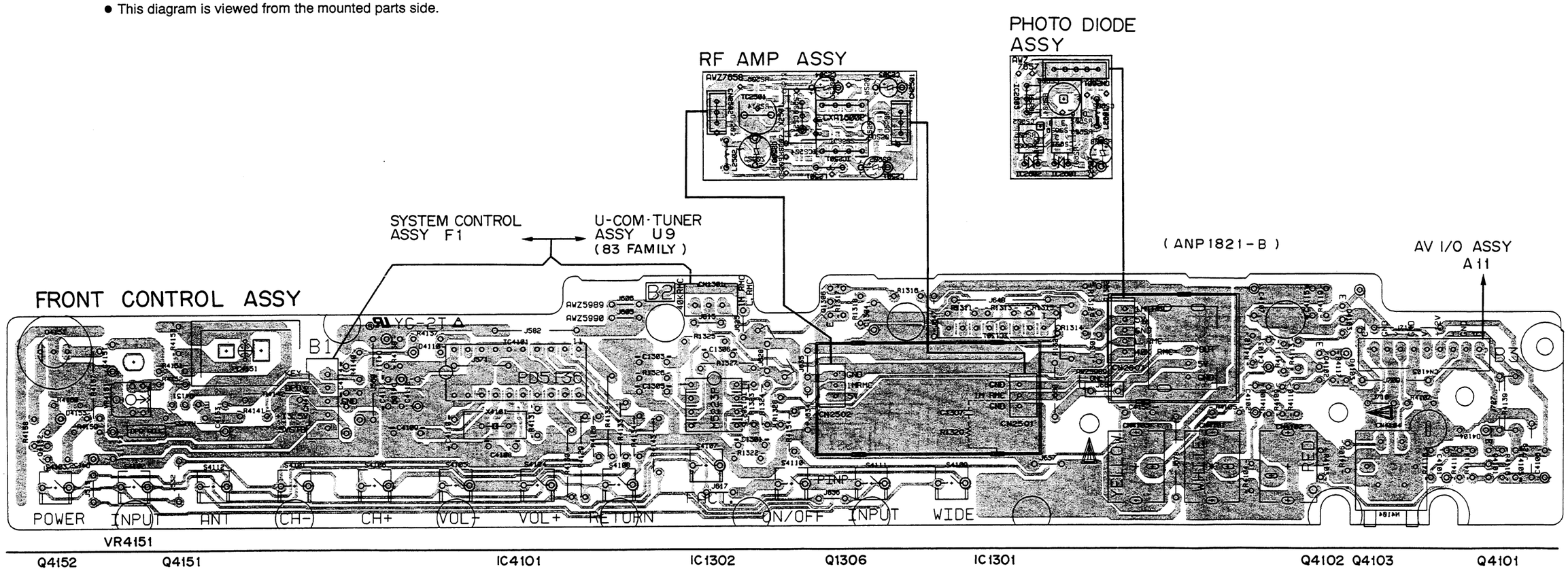


SCH-18 FRONT CONTROL ASSY, RF AMP ASSY, PHOTO DIODE ASSY

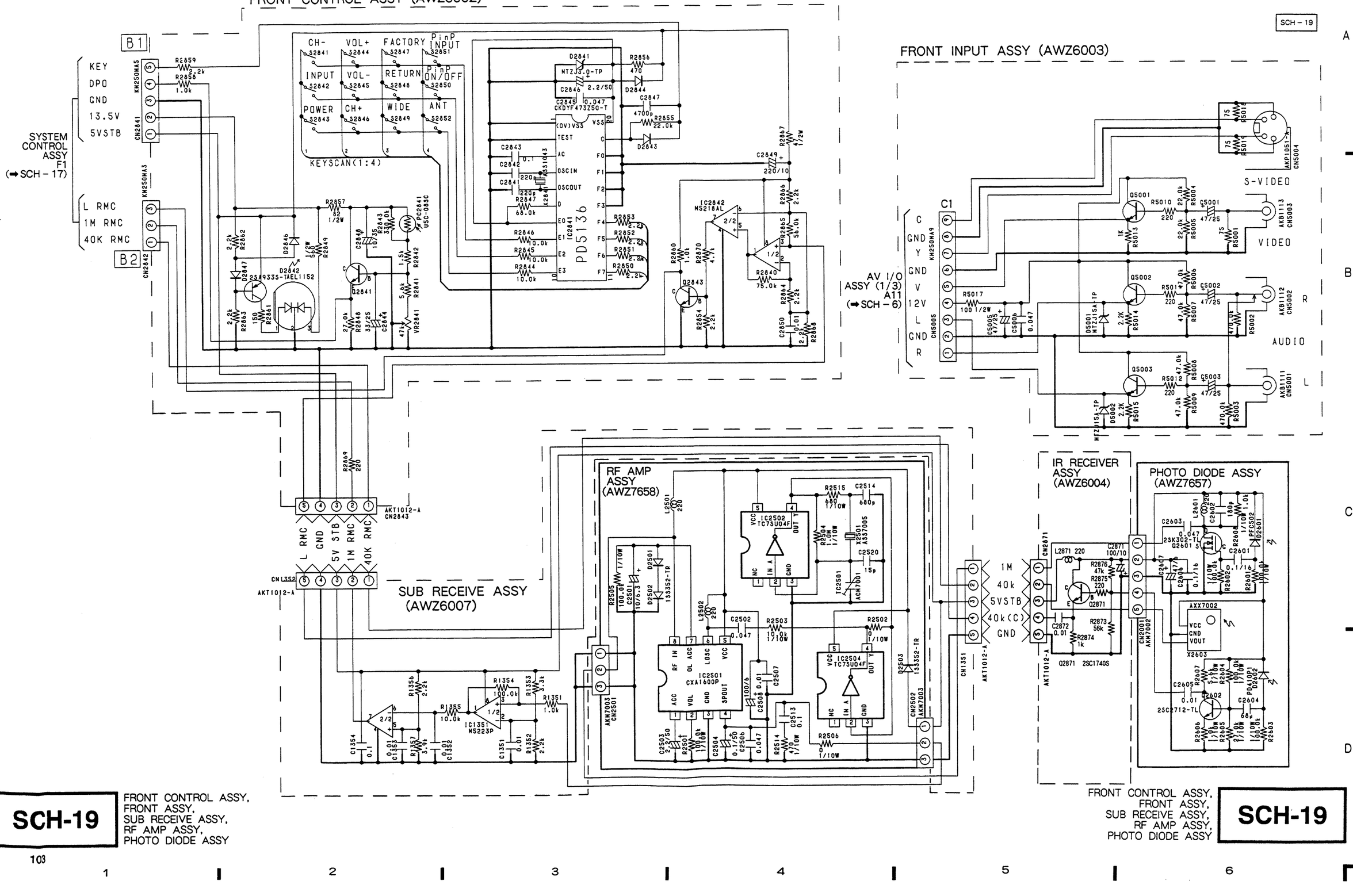
FRONT CONTROL ASSY, RF AMP ASSY, PHOTO DIODE ASSY **SCH-18**

PCB – 9

● This diagram is viewed from the mounted parts side.



7.19 FRONT CONTROL, FRONT INPUT, SUB RECEIVE, RF AMP, IR RECEIVER AND PHOTO DIODE ASSEMBLIES (FOR PRO-98)



PCB – 10

● This diagram is viewed from the mounted parts side.

RF AMP ASSY

FRONT
INPUT ASSY

SUB RECEIVE ASSY

IR RECEIVER ASSY

PHOTO DIODE
ASSY

AV I/O ASSY
A11

SYSTEM CONTROL
ASSY F1

(ANP1823-A)

FRONT CONTROL ASSY

VR2841

Q2842 Q2841 IC2841 Q2843 IC2842

8. PCB PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The "⚠" mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohms and 47k ohms (Tolerance is shown by J = 5%, and K =10%).

560Ω → 56 ×10¹ → 561 ---------- RD1/8PM 5 6 1 J
47kΩ → 47 ×10³ → 473 ---------- RD1/4PS 4 7 3 J
0.5Ω → 0R5 ---------- RN2H 0 R 5 K
1Ω → 010 ---------- RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ → 562 ×10¹ → 5621 ---------- RN1/4PC 5 6 2 1 F

- *Parts marked by ☆ are important parts which relate in X-rays radiation. If any of these parts need to be replaced, always replace with specified parts.*
- *Parts marked by x are important parts which relate in X-rays radiation. If a failure occurs in any of these parts, replace the printed circuit board assembly where the relevant part has already been adjusted as a working component. Do not replace the actual part itself. If any part marked by x is replaced, there is danger of being exposed to X-rays.*

Mark	No.	Description	Parts No.
		LIST OF ASSEMBLIS	
		U-COM･TUNER ASSY (83 family)	AWV1483
		U-COM･TUNER ASSY (SD-P5185-K)	AWV1484
		U-COM･TUNER ASSY (PRO-98)	AWV1485
NSP		CONVERGENCE ASSY	AWV1486
		├ CONVERGENCE ASSY	AWZ5981
		├ R.CRT DRIVE ASSY	AWZ5982
		├ G.CRT DRIVE ASSY	AWZ5983
		├ POWER SW ASSY	AWZ5984
		└ B.CRT DRIVE ASSY	AWZ6009
NSP		AV I/O ASSY (SD-P5185-K)	AWV1488
		├ AV I/O ASSY	AWZ5985
		├ Y/C SELECTOR ASSY	AWZ5987
		├ FRONT CONTROL ASSY	AWZ5990
		├ P IN P SELECTOR ASSY	AWZ5993
		├ SYSTEM CONTROL ASSY	AWZ5998
		└ IR RECEIVE ASSY	AWX7012
		├ PHOTO DIODE ASSY	AWZ7657
		└ RF AMP ASSY	AWZ7658
NSP		AV I/O ASSY (83 family)	AWV1487
NSP		AV I/O ASSY (PRO-98)	AWV1489
		├ AV I/O ASSY (83 family)	AWZ5985
		├ AV I/O ASSY (PRO-98)	AWZ5986
		├ Y/C SELECTOR ASSY (83 family)	AWZ5987
		├ Y/C SELECTOR ASSY (PRO-98)	AWZ5988
		├ FRONT CONTROL ASSY (83 famil only)	AWZ5989
		├ P IN P SELECTOR ASSY	AWZ5993
		└ SYSTEM CONTROL ASSY (PRO-98 only)	AWZ5998

Mark	No.	Description	Parts No.
NSP		PRO FRONT ASSY (PRO-98 only)	AWV1493
		├ IR RECEIVER ASSY	AWX7012
		├ PHOTO DIODE ASSY	AWZ7657
		└ RF AMP ASSY	AWZ7658
		├ FRONT CONTROL ASSY	AWZ6002
		├ FRONT INPUT ASSY	AWZ6003
		├ IR RECEIVER ASSY	AWZ6004
		├ PRO S.G ASSY	AWZ6005
		├ CENTER SP SW	AWZ6006
		├ SUB RECEIVE ASSY	AWZ6007
		└ EXT. SP ASSY	AWZ6008
NSP		P IN P ASSY (SD-P5185-K and 83 family)	AWV1490
NSP		P IN P ASSY (PRO-98)	AWV1492
		├ CONVERGENCE PD ASSY	AWZ5991
		├ P IN P ASSY	AWZ5992
		├ A CONNECTOR ASSY	AWZ5994
		├ B CONNECTOR ASSY	AWZ5995
		├ C CONNECTOR ASSY	AWZ5996
		├ VM ASSY (PRO-98 only)	AWZ5997
		├ RELAY DRIVE ASSY	AWZ5999
		└ SUB CONVERGENCE ASSY	AWZ6001
☆		POWER SUPPLY ASSY (SD-P5185-K and 83 family)	AWV1499
☆		POWER SUPPLY ASSY (PRO-98)	AWV1500

Mark	No.	Description	Parts No.
		U-COM･TUNER ASSY (AWV1483, AWV1484 and AWV1485)	
		S E M I C O N D U C T O R S	
		IC901	AT24C08-10PC
		IC4901	CXA1734S
		IC1401	LA4280-P
		IC904	M66320P
		IC605	MC14011BCP
		IC902	MC34064P
		IC604	NJM7809FAS
		IC602	PA0030
		IC903	PD5301A
		IC603	TA8647S
		IC601	TA8801AN
		IC1003	TC74HC4066AP
		IC1402	UPC1853CT-01
		Q1407 ,Q1409 ,Q1417 ,Q4802 ,Q4807	2SA933S
		Q4811 ,Q4813 ,Q4902 ,Q609 ,Q610	2SA933S
		Q612 ,Q614 ,Q625 ,Q627 ,Q629	2SA933S
		Q631 ,Q632 ,Q650 ,Q655 -Q658	2SA933S
		Q663 ,Q668 -Q672 ,Q676 -Q679	2SA933S
		Q901 ,Q915 ,Q927 -Q930	2SA933S
		Q910 (AWV1483 only)	2SA933S
		Q924 ,Q926 (AWV1484 and AWV1485 only)	2SA933S
		Q932 (AWV1484 and AWV1485 only)	2SA933S
		Q903 ,Q905 ,Q912 (AWV1483 only)	2SC1740S
		Q1402 ,Q1404 ,Q1406 ,Q1408	2SC1740S
		Q1410 -Q1413 ,Q1415 ,Q4804 ,Q4806	2SC1740S
		Q1414 ,Q1416 (AWV1484 and AWV1485 only)	2SC1740S
		Q4808 -Q4810 ,Q4814 ,Q4903 ,Q4904	2SC1740S
		Q601 -Q608 ,Q611 ,Q613 ,Q615	2SC1740S
		Q618 -Q624 ,Q626 ,Q628 ,Q630	2SC1740S
		Q633 ,Q636 ,Q637 ,Q645 ,Q647	2SC1740S
		Q649 ,Q651 ,Q659 -Q662	2SC1740S
		Q664 -Q667 ,Q673 -Q675	2SC1740S
		Q680 -Q685 ,Q902 ,Q904	2SC1740S
		Q906 -Q909 ,Q916 -Q921 ,Q923	2SC1740S
		Q925 (AWV1484 and AWV1485 only)	2SC1740S
		Q933 ,Q934	2SC1740S
		Q4812	2SC2878
		Q1401	2SD1276A
		Q4803	2SD438
		Q911	2SD880
		Q652 -Q654	2SK246
		Q4801 ,Q4901 ,Q634 ,Q635 ,Q639	XDC124ES
		D1405 (LED : RED)	AEL1099
		D1409 ,D1410 ,D1413 ,D1415 ,D1416	HSS104-02
		D1418 -D1420 ,D1423 ,D1425	HSS104-02
		D1427 -D1429 ,D1434 -D1437	HSS104-02
		D1450 -D1457 ,D4801 -D4808 ,D4816	HSS104-02
		D601 -D610 ,D615 ,D620 ,D622	HSS104-02
		D625 ,D626 ,D628 ,D629 ,D631	HSS104-02
		D635 ,D636 ,D638 ,D639 ,D641	HSS104-02
		D643 ,D651 -D654 ,D659 -D661	HSS104-02
		D669 ,D670 ,D674 -D676 ,D680	HSS104-02
		D684 -D687 ,D901 -D903 ,D905	HSS104-02
		D906 ,D908 ,D909 (AWV1483 only)	HSS104-02
		D911 -D913 ,D918 -D925	HSS104-02
		D914 ,D915 (AWV1485 only)	HSS104-02
		D949 ,D950 ,D971 ,D977 -D979	HSS104-02
		D981 -D984	HSS104-02
		D611 ,D688	HZS11A1L
		D4905 ,D4906 ,D616 -D619 ,D621	MTZJ15

Mark	No.	Description	Parts No.
		D623 ,D624 ,D627 ,D630	MTZJ15
		D632 -D634 ,D637 ,D640 ,D642	MTZJ15
		D644 -D650 ,D655 ,D658 ,D662	MTZJ15
		D941 -D945	MTZJ15
		D1411 ,D1412 ,D4815 ,D4817 ,D910	MTZJ6.8
		D907 (AWV1483 only)	MTZJ6.8
		D916 ,D927 -D930	MTZJ6.8
		D933 -D935 ,D938 ,D939 (AWV1484 and AWV1485 only)	MTZJ6.8
		D936 ,D937 ,D947	MTZJ6.8
		D946 ,D973 (AWV1485 only)	MTZJ6.8
		D951 -D966 ,D968 ,D969	MTZJ6.8
		D972 (AWV1484 and AWV1485 only)	MTZJ6.8
		D974 -D976 ,D985 ,D990	MTZJ6.8
		D4818	RD12ESB3
		D4810	RD33ESB3
		D904 ,D931 ,D932	RD5.1ESB2
		D1401 ,D1426 ,D4809	RD5.6ESB3
		D1403 (AWV1484 and AWV1485 only)	S5688G
		D671 -D673 ,D677 -D679	S5688G
		D681 -D683	S5688G
		C O I L S	
		L1401 ,L1402 (1 μH)	ATH-133
		DL601 (DELAY LINE)	ATN1014
		L602	LAU121K
		L901	LAU180K
		L4801 ,L4802 ,L4901	LAU2R2K
		L604 -L606	LAU4R7K
		L4804	LAU560K
		L601	LAU680K
		S W I T C H A N D R E L A Y	
		RY1401 (AWV1484 and AWV1485 only)	ASR1040
		S1401 (AWV1483 only)	ASH1001
		C A P A C I T O R S	
		TC901	ACM-020
		C4915 (3.3/50)	ACH1128
		C4918 (10/50)	ACH1129
		C662	CCCCH100D50
		C923	CCCCH120J50
		C608 ,C617	CCCCH151J50
		C603	CCCCH820J50
		C4801 ,C4809 -C4811 ,C4815	CCCSL101J50
		C929 ,C930	CCCSL101J50
		C615 ,C679 -C681	CCCSL121J50
		C1421 ,C1428 ,C682 -C684	CCCSL151J50
		C614	CCCSL180J50
		C910 ,C912	CCCSL221J50
		C612 ,C613	CCCSL390J50
		C4817	CCCSL470J50
		C623	CCCSL820J50
		C668 ,C669 ,C675 -C677	CEANP010M50
		C625	CEANP4R7M50
		C1472 ,C4904 ,C4917 ,C602 ,C604	CEAS010M50
		C606 ,C611 ,C621 ,C622 ,C629	CEAS010M50
		C916 ,C919 ,C935 -C938	CEAS010M50
		C934 (AWV1484 and AWV1485 only)	CEAS010M50
		C909	CEAS0R1M50
		C1403 ,C4806 ,C4820 ,C4822 ,C4901	CEAS100M50
		C620 ,C652 ,C656 ,C658 ,C661	CEAS100M50
		C666 ,C670 ,C903	CEAS100M50
		C4808 ,C618 ,C917 ,C925	CEAS101M10
		C4909 ,C631 ,C632 ,C637 ,C644	CEAS101M25
		C654 ,C667 ,C674	CEAS101M25
		C4812 ,C628	CEAS102M16
		C911	CEAS102M25

Mark	No.	Description	Parts No.
	C1471		CEAS220M50
	C1425		CEAS221M10
	C671 ,C685		CEAS221M16
	C1429 ,C1437		CEAS222M35
	C1418 ,C1419 ,C1450 -C1452		CEAS2R2M50
	C1457 -C1459 ,C636 ,C640 ,C664		CEAS2R2M50
	C601 ,C609 ,C626		CEAS330M25
	C1422 ,C1427		CEAS330M35
	C933 (AWV1484 and AWV1485 only)		CEAS330M35
	C4826		CEAS331M16
	C939 (AWV1484 and AWV1485 only)		CEAS331M50
	C1469 ,C1470		CEAS3R3M50
	C908 (AWV1483 and AWV1484 only)		CEAS3R3M50
	C908 (AWV1485 only)		CEAS4R7M50
	C1414 ,C4805 ,C4824 ,C4827 ,C4828		CEAS470M25
	C616 ,C627 ,C673 ,C686 ,C906		CEAS470M25
	C927 ,C932		CEAS470M25
	C1423		CEAS470M50
	C630		CEAS471M10
	C1401 ,C1436		CEAS471M50
	C4902 ,C4906 -C4908 ,C4911 ,C4912		CEAS4R7M50
	C4916 ,C4921 ,C4922 ,C605 ,C625		CEAS4R7M50
	C643 ,C648		CEAS4R7M50
	C941 (AWV1484 and AWV1485 only)		CEASR22M50
	C4905 ,C610		CEASR47M50
	C1424 ,C1426		CEHAQ100M50
	C641 ,C645		CFTXA104J50
	C1430 ,C1438		CFTXA124J50
	C4903		CFTXA224J50
	C1460 ,C1461 ,C4818 ,C921		CKCYB102K50
	C940 (AWV1484 and AWV1485 only)		CKCYB102K50
	C902		CKCYB103K50
	C907 ,C913 ,C918 ,C920 ,C926 ,C931 (AWV1483 only)		CKCYB103K50
	C907 ,C913 ,C918 ,C920 ,C926 ,C931 (AWV1484 and AWV1485 only)		CKCYF103Z50
	C915 (AWV1485 only)		CKCYB103K50
	C928		CKCYB122K50
	C1416 ,C1417		CKCYB152K50
	C4919 ,C4920		CKCYB222K50
	C678		CKCYB391K50
	C4829		CKCYB471K50
	C1402		CKCYB561K50
	C904 (AWV1483 only)		CKCYB472K50
	C1404 ,C1439 ,C4802 ,C4804 ,C4813		CKCYF103Z50
	C4823 ,C4825 ,C4910 ,C642 ,C647		CKCYF103Z50
	C655 ,C659 ,C914		CKCYF103Z50
	C905 (AWV1483 only)		CKCYF103Z50
	C918 ,C920 ,C926 ,C931		CKCYF103Z50
	C1413 ,C1432 ,C1433 ,C1435 ,C619		CKCYF473Z50
	C624 ,C633 ,C639 ,C646 ,C672		CKCYF473Z50
	C687 ,C924		CKCYF473Z50
	C901 (AWV1483 only)		CKCYF473Z50
	C634		CKCYX104M25
	C1464		CQMA102J50
	C638		CQMA103J50
	C1466 ,C1468 ,C1475		CQMA104J50
	C650		CQMA124J50
	C665		CQMA183J50
	C1476		CQMA222J50
	C1462 ,C1463 ,C653 ,C657		CQMA223J50
	C4913		CQMA272J50
	C663		CQMA472J50
	C4914 ,C660 ,C901		CQMA473J50
	C1473 ,C607		CQMA681J50
	C1465 ,C1467		CQMA682J50
	C1474		CQMA823J50
RESISTORS			
	R1052		RA5T153J
	R503 -R505 ,R881 ,R882		RD1/2PM100J
	R952		RD1/2PM122J
	R1434 ,R1437		RD1/2PM152J
	R880		RD1/2PM270J
	R1405 ,R4810 ,R896 -R898		RD1/2PM271J
	R4811 ,R4846		RD1/2PM681J
	R1435 ,R1440		RD1/4PMFL100J
	R509		RD1/4PMFL101J
	R1406 ,R4840		RD1/4PMFL220J
	R1436 ,R1438		RD1/4PMFL2R2J
	R1100 ,R508 ,R686 ,R945		RD1/4PMFL3R9J
	R694		RN1/4PC1001F
	R672 ,R681 ,R695		RN1/4PC1002F
	R673 ,R674		RN1/4PC1202F
	R693		RN1/4PC2002F
	R682		RN1/4PC2402F
	R631		RN1/4PC2701F
	R1402		RN1/4PC3002F
	R4908		RN1/4PC4302F
	R670		RN1/4PC4701F
	R632		RN1/4PC5601F
	R1401		RN1/4PC6201F
	R4903		RN1/4PC6202F
	R721		RS2LMF3R3J
	R687		RS2LMF4R7J
	R4809		RS2MMF220J
	VR601 (100Ω)		ACP1037
	VR602 (220Ω)		ACP1038
	VR4801,VR603 (4.7k)		ACP1042
	Other Resistors		RD1/8PM□□□J
OTHERS			
	TV FRONT-END SYSTEM UNIT		AXF1077
	RF SWITCH		AXF1078
	SPEAKER TERMINAL 4-P (AWV1484 only)		AKE1057
	PLATE SPRING		ANG1569
	HEAT SINK		ANH-575
	HEAT SINK		ANH1150
	HEAT SINK		ANH1506
	SHIELD PLATE		ANK1500
	X901 CERAMIC RESONATOR (8.00MHz)		ASS1015
	X601 CERAMIC RESONATOR (503kHz)		ASS1019
	X602 CRYSTAL RESONATOR (3.579545MHz)		ASS1091
	SCREW		BBZ30P080FCU
	CN903 11P PLUG		KM200IA11
	CN1402 11P PLUG (AWV1485 only)		KM200IA11
	CN901 16P PLUG (AWV1484 and AWV1485 only)		KM200IA16
	CN604 6P PLUG (AWV1485 only)		KM200IA6
	CN603 8P PLUG		KM200IA8
	CN601 PLUG 11-P		KM250MA11
	CN906 PLUG 13-P		KM250MA13B
	CN606 PLUG 4-P		KM250MA4
	CN1401 PLUG 8-P		KM250MA8
	CN902 PLUG 8-P (AWV1483 only)		KM250MA8B
	PIN JACK(1P) (AWV1485 only)		AKB1111
	CN1403 PIN JACK(2P) (AWV1484 only)		AKB1146
	CN1403 PIN JACK(2P) (AWV1485 only)		AKB1151
	CN910 JACK (AWV1483 only)		AKN-209
	CN905 PLUG 8-P		KM250MA8R

Mark	No.	Description	Parts No.
	CN605	PLUG 9-P	KM250MA9R
	CN4801,CN602	10P SOCKET	KP250NA10
	CN904	SOCKET 7-P	KP250NA7
	SCREW		PBZ30P080FMC

CONVERGENCE ASSY (AWZ5981)

SEMICONDUCTORS			
	IC2316		M5228P
	IC2312,IC2313,IC2315,IC2319-IC2321		NJM4558LD
	IC2603		NJM4558LD
	IC2302		NJM78M05FAS
	IC2301		NJM79M05FA
	IC2303,IC2304		PA0053B
	IC2305,IC2306		PM0002B
⚠	IC2601		STK4274
	IC2307		STK4277-SL
	IC2311		TC4053BP
	IC2310,IC2602		TC4066BP
	Q2301		2SA933S
	Q2302 -Q2306 ,Q2602		2SC1740S
	D2301 ,D2302 ,D2309 ,D2313		HSS104-02
	D2315 -D2317		HSS104-02
	D2310 -D2312 ,D2319 ,D2325 -D2330		MTZJ12
	D2333 ,D2334 ,D2336 ,D2340		MTZJ12
	D2342 ,D2343 ,D2346 ,D2348 ,D2350		MTZJ12
	D2352 ,D2355 ,D2357 -D2359 ,D2362		MTZJ12
	D2366 ,D2370 -D2380 ,D2382 -D2388		MTZJ12
	D2394 -D2397 ,D2399 -D2406		MTZJ12
	D2601 -D2605 ,D2611 -D2616		MTZJ12
	D2305 -D2308 ,D2354		MTZJ6.8
	D2398		RD20ESB
	D2314		RD4.7ESB2
	D2389 -D2393 ,D2407 -D2411		S5688G
	D2607 -D2610		S5688G
CAPACITORS			
	C2346 ,C2347 ,C2382 ,C2383		CCCCH101J50
	C2609		CCCSL271J50
	C2348		CCMSL470J50
	C2308 ,C2339 -C2341 ,C2345 ,C2375		CEAS010M50
	C2386		CEAS010M50
	C2381 ,C2432 ,C2611		CEAS100M50
	C2303 -C2305 ,C2313 ,C2322 ,C2323		CEAS101M10
	C2344 ,C2349 ,C2355 ,C2356		CEAS101M10
	C2393 ,C2394 ,C2396 ,C2397 ,C2424		CEAS101M10
	C2426 ,C2615 ,C2621 ,C2622		CEAS101M10
	C2307 ,C2312 ,C2366 ,C2372		CEAS221M10
	C2376 ,C2377		CEAS330M35
	C2320 ,C2321 ,C2330 ,C2357 ,C2358		CEAS331M6
	C2367 ,C2371		CEAS331M6
	C2378		CEAS470M25
	C2379		CEAS4R7M50
	C2342		CEASR47M50
	C2301 ,C2302		CEHAQ330M35
	C2405 -C2408 ,C2601 -C2604		CEHAQ471M35
	C2359 ,C2374		CFTYA224J50
	C2610		CKCYB681K50
	C2306 ,C2309 ,C2314 -C2319		CKCYF473Z50
	C2324 ,C2325 ,C2327 -C2329		CKCYF473Z50
	C2331 -C2333 ,C2336 ,C2337		CKCYF473Z50
	C2350 -C2353 ,C2361 ,C2362		CKCYF473Z50
	C2364 ,C2365 ,C2368 -C2370 ,C2385		CKCYF473Z50
	C2387 -C2392 ,C2409 -C2412 ,C2425		CKCYF473Z50
	C2427 ,C2428 ,C2605 -C2608		CKCYF473Z50
	C2617 -C2620		CKCYF473Z50
	C2326		CQMA102J50
	C2310		CQMA103J50
	C2380		CQMA104J50
	C2311		CQMA182J50
	C2338 ,C2343		CQMA471J50
RESISTORS			
	R2563		RD1/2PM271J
	R2621 -R2623		RD1/2PM470J
	R2518 ,R2520 ,R2603 ,R2604		RD1/2PMFL220J
	R2610		RN1/4PC1001F
⚠	R2301 ,R2302		RS1LMF8R2J
⚠	R2511 ,R2519		RS2LMFR47J
⚠	R2613		RS3LMF010J
⚠	R2532 ,R2541		RS3LMF3R3J
⚠	R2334 ,R2384 ,R2482 ,R2486 ,R2531		RS3LMF6R8J
⚠	R2536 ,R2539 ,R2540 ,R2543 ,R2547		RS3LMF6R8J
⚠	R2601 ,R2602 ,R2612		RS3LMF6R8J
	VR2301-VR2303,VR2310-VR2312 (4.7k)		ACP1042
	VR2304,VR2313 (10k)		ACP1043
	VR2305,VR2307,VR2308 (47k)		ACP1045
	VR2315,VR2602 (47k)		ACP1045
	VR2306,VR2314 (220k)		ACP1047
	VR2601		VRTS6VS471
	Other Resistors		RD1/8PM□□□J
OTHERS			
	BINDER		AEP-215
	HEAT SINK M		ANH-697
	HEAT SINK		ANH1438
	HEAT SINK		ANH1482
	SHIELD PLATE		ANK1500
	CN2601	5P PLUG	KM200IA5
	CN2308	6P PLUG	KM200IA6
	CN2303	PLUG 12-P	KM250MA13
	CN2301,CN2306	PLUG 6-P	KM250MA6
	CN2307	PLUG 6-P	KM250MA6B
	CN2305	PLUG 6-P	KM250MA6R
	CN2302	PLUG 8-P	KM250MA8R
	SCREW		ABA1056
	SCREW		BBZ30P080FCU
	SCREW		BBZ30P080FZK
	SCREW		PBZ30P080FMC

R.CRT DRIVE ASSY (AWZ5982)

SEMICONDUCTORS			
	Q2701		2SC4001
	D2701		HSS104-02
COILS			
	L2703		LAU101K
	L2701 ,L2702		LAU470K
CAPACITORS			
	C2704 (1000p / 2k)		ACG1001
	C2701		CEAS101M10
	C2702		CKCYB681K50
RESISTORS			
	R2705 (47,1/2W)		ACN-225
	R2702 (1k,1/2W)		ACN1006
	R2703 ,R2704		RS3LMF332J
	Other Resistors		RD1/8PM□□□J

Mark	No.	Description	Parts No.
OTHERS			
△		CRT SOCKET	AKG1004
		HEAT SINK M3	ANH1409
	CN2702	PLUG 3-P	KM250MA3R
		SCREW	PMB30P100FMC

G.CRT DRIVE ASSY (AWZ5983)

SEMICONDUCTORS			
	Q2731		2SC4001
	D2731		HSS104-02
COILS			
	L2733		LAU101K
	L2731 ,L2732		LAU470K
CAPACITORS			
	C2734 (1000p / 2k)		ACG1001
	C2733 (4.7 / 250)		ACH-378
	C2731		CEAS101M10
	C2732		CKCYB681K50
RESISTORS			
	R2735 (47,1/2W)		ACN-225
	R2732 (1k,1/2W)		ACN1006
	R2733 ,R2734		RS3LMF332J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	J2 ,J3	LEAD WITH HOUSING	ADX1508
△		CRT SOCKET	AKG1004
		HEAT SINK M3	ANH1409
	CN2732	PLUG 3-P	KM250MA3
		SCREW	PMB30P100FMC

POWER SW ASSY (AWZ5984)

SWITCH			
	S3591		ASG1006
OTHERS			
	CN3591	PLUG 2-P	AKM-089

B.CRT DRIVE ASSY (AWZ6009)

SEMICONDUCTORS			
	Q2761		2SC4001
	D2761		HSS104-02
COILS			
	L2763		LAU101K
	L2761 ,L2762		LAU470K
CAPACITORS			
	C2764 (1000p / 2k)		ACG1001
	C2761		CEAS101M10
	C2762		CKCYB681K50
RESISTORS			
	R2765 (47,1/2W)		ACN-225
	R2762 (1k,1/2W)		ACN1006
	R2763 ,R2764		RS3LMF332J
	Other Resistors		RD1/8PM□□□J
OTHERS			
△		CRT SOCKET	AKG1004
		HEAT SINK M3	ANH1409
	CN2762	PLUG 3-P	KM250MA3B
	CN2763	PLUG 5-P	KM250MA5
		SCREW	PMB30P100FMC

Mark	No.	Description	Parts No.

AV I/O ASS'Y (AWZ5985 and AWZ5986)

SEMICONDUCTORS			
	IC2251		M66320P
	IC1604		NJM7805FAS
	IC1605		NJM79M05FA
	IC1731		PD5300A
	IC1804		TC4013BP
	IC1802		TC4040BP
	IC1601-IC1603		TC4051BP
	IC1803		TC74HC04AP
	IC1801		TC74HC4538AP
	Q1604 ,Q1607 ,Q1608 ,Q1616 ,Q1621		2SA933S
	Q1806 ,Q1853 ,Q1857 -Q1859		2SA933S
	Q1862 ,Q1863 ,Q1865 -Q1869 ,Q1875		2SA933S
	Q1601 -Q1603 ,Q1605 ,Q1606		2SC1740S
	Q1609 -Q1615 ,Q1617 -Q1620		2SC1740S
	Q1622 -Q1627 ,Q1731 ,Q1801 ,Q1802		2SC1740S
	Q1807 ,Q1860 ,Q1861 ,Q1864		2SC1740S
	Q1870 -Q1873 ,Q1878 ,Q1881-Q1888		2SC1740S
	Q2251 ,Q2252		2SC1740S
	Q1856		2SK246
	Q1805		RN1201
	Q1735		XDC143ES
	D1601 -D1603 ,D1605 ,D1732		HSS104-02
	D1734 -D1740 ,D1744 ,D1745		HSS104-02
	D1748 -D1756 ,D1803 -D1823		HSS104-02
	D1830 -D1837 ,D1847 ,D1851 ,D1852		HSS104-02
	D1854 -D1856 ,D1859 -D1862		HSS104-02
	D1731 ,D1733 ,D1741 -D1743		MTZJ6.8
	D1746 ,D1747 ,D1801 ,D1802		MTZJ6.8
	D1824 -D1827 ,D2251 -D2259		MTZJ6.8
	D2263 ,D2264		MTZJ6.8
	D1604		RD3.6ESB1
COILS			
	L1601 (1000 μH)		ATH1046
	L2251		LAU220J
	L1731		LAU2R2K
	DL1851	DELAY LINE	ATN1014
CAPACITORS			
	C1805		CCCCH151J50
	C2254 ,C2255		CCCSL101J50
	C1849		CCCSL270J50
	C1855		CEANP010M50
	C1734 ,C1739		CEAS0R1M50
	C1626 ,C1635 ,C1646 ,C1652		CEAS100M50
	C1602 ,C1606 ,C1610 ,C1614 -C1616		CEAS101M10
	C1618 ,C1623 ,C1641 ,C1643 ,C1644		CEAS101M10
	C1649 ,C1736		CEAS101M10
	C1603 ,C1609 ,C1642 ,C1854 ,C1862		CEAS101M25
	C1601 ,C1608		CEAS102M10
	C1648		CEAS220M50
	C1853		CEAS221M10
	C1612		CEAS221M16
	C1620 ,C1625 ,C1627 ,C1637 -C1640		CEAS2R2M50
	C1650 ,C1651		CEAS2R2M50
	C1604 ,C1858 ,C1876		CEAS330M35
	C1851		CEAS331M16
	C1802 ,C1804 ,C1807 ,C1810 ,C1852		CEAS470M25
	C2251		CEAS470M25
	C1628 ,C1629 ,C1633		CEAS471M10
	C1634		CEHAQ101M10
	C1619		CEHAQ2R2M50
	C1740 ,C1741		CKCYB102K50

Mark	No.	Description	Parts No.
	C1645 ,C1647		CKCYB331K50
	C2253		CKCYB471K50
	C1738		CKCYB561K50
	C1605 ,C1607 ,C1611 ,C1613 ,C1617		CKCYF103Z50
	C1621 ,C1622 ,C1624 ,C2252		CKCYF103Z50
	C1630 -C1632 ,C1636 ,C1737		CKCYF473Z50
	C1801 ,C1803 ,C1806 ,C1809 ,C1814		CKDYF473Z50
	C1733		CQMA102J50
	C1808		CQMA471J50
	C1813		CQPA362J100
RESISTORS			
	R1763		RA8T103J
	R1761 ,R1762		RA9T103J
	R1816		RD1/2PM102J
	R1634 ,R1724		RD1/2PM221J
	R1711		RD1/2PMFL2R2J
	R1651 ,R1690 ,R1718		RD1/2PMFL3R9J
	R1652 ,R1689 ,R1719		RD1/2PMFL6R8J
	R1691		RD1/4PM221J
	R1602 ,R1606		RD1/4PM750J
	R1851		RD1/4PMFL3R9J
	R1806		RN1/4PC1202F
	R1803		RN1/4PC5102F
	R1668		RS1LMF3R9J
	R1697		RS3LMF3R3J
	R1704		RS3LMF6R8J
	VR1812		VRTB6VS104
	VR1801		VRTS6VS103
	Other Resistors		RD1/8PM□□□J
OTHERS			
	PIN JACK(12P) (AWZ5986 only)		AKB1114
	PIN JACK(3P) (AWZ5986 only)		AKB1137
	CABLE HOLDER		AKT1011
	HEAT SINK		ANH-880
	X1732 CERAMIC RESONATOR (8.00MHz)		ASS1015
	X1731 CERAMIC RESONATOR (12MHz)		ASS1062
	J1001 11P-HOUSING WIRE		ADX2197
	J1002 8P-HOUSING WIRE		ADX2198
	J1 JUMPER WIRE		D15A13-150-2651
	J2 JUMPER WIRE		DHH03-150-2651
	CN1608 PIN JACK(12P) (AWZ5985 only)		AKB1094
	CN1609 PIN JACK(3P) (AWZ5985 only)		AKB1102
	CN1601,CN1602 PLUG 10-P		KM200IA10
	CN1607 PLUG 13-P		KM200IA13
	CN1606 PLUG 5-P		KM200IA5
	CN1612 PLUG 3-P (AWZ5986 only)		KM250MA3
	CN1603 PLUG 9-P		KM250MA9B
	CN1605,CN1851 PLUG 10-P		KM250NA10L
	CN1604 PLUG 7-P		KM250NA7L
	SCREW		PBZ30P080FMC

Y/C SELECTOR ASSY (AWZ5987 and AWZ5988)

SEMICONDUCTORS			
	IC2151		TC4052BP
	Q2163 ,Q2164		2SA933S
	Q2151 -Q2156 ,Q2161 ,Q2162		2SC1740S
	Q2165 ,Q2166		2SC1740S
	D2151 ,D2152		HSS104-02
	D2153 -D2155		MTZJ12
CAPACITORS			
	C2151 ,C2154 ,C2158		CEAS101M10
	C2164		CEAS101M25
	C2152 ,C2153 ,C2156 ,C2161 ,C2162		CKCYF103Z50
RESISTORS			
	R2196 ,R2197		RD1/2PM821J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	CN2151 SOCKET (AWZ5987)		AKP1065
	CN2151 SOCKET (AWZ598)		AKP1066
	CABLE HOLDER		AKT1011

FRONT CONTROL ASSY (AWZ5989 and AWZ5990)

SEMICONDUCTORS			
	IC1301		M5218AL
	IC1302		M5223P
	IC4101		PD5136
	Q4152		2SA933S
	Q1306 ,Q4101 -Q4103		2SC1740S
	D4151 (LED : RED and GREEN)		AEL1152
	D4110 ,D4111 ,D4152 ,D4153		HSS104-02
	D4103 ,D4104		MTZJ15
	D4109		MTZJ3.0
COIL			
	L1301 (AWZ5990 only)		LAU221K
SWITCHES			
	S4101 -S4112		ASG1034
CAPACITORS			
	C4108 ,C4109		CCCSL221J50
	C4152 (AWZ5989 only)		CCCSL221J50
	C4113		CEAS101M10
	C1304 (AWZ5990 only)		CEAS221M10
	C4112		CEAS2R2M50
	C4101 -C4103 ,C4106 ,C4107		CEAS470M25
	C1301 -C1303 ,C1305 (AWZ5990 only)		CKCYB103K50
	C4114		CKCYB472K50
	C4105 ,C4111 ,C4115		CKCYF473Z50
	C1306 (AWZ5990 only)		CKCYX104M16
	C4110		CKCYX104M16
RESISTORS			
	R4157		RD1/2PM561J
	R4139		RD1/4PMFL101J
	R1321		RD1/4PMFL470J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	SHIELD CASE A(MET) (AWZ5990 only)		ANK7009
	SHIELD CASE B(MET) (AWZ5990 only)		ANK7010
	CN4103 PIN JACK(1P)		AKB1055
	CN4101 PIN JACK(1P)		AKB1056
	CN4102 PIN JACK(1P)		AKB1057
	CN4104 SOCKET		AKP1081
	X4101 CERAMIC OSCILLATOR (480kHz)		ASS1043
	CN1301 PLUG 3-P		KM250MA3
	CN4106 PLUG 5-P		KM250MA5B
	CN4105 PLUG 9-P		KM250MA9

P IN P SELECTOR ASSY (AWZ5993)

SEMICONDUCTORS			
	IC2201		TC4051BP
	Q2207		2SA933S
	Q2201 -Q2206		2SC1740S
	D2201		HSS104-02

Mark	No.	Description	Parts No.
CAPACITORS			
	C2201 ,C2203 ,C2205		CEAS101M10
	C2202 ,C2204 ,C2206 ,C2207		CKCYF103Z50
RESISTORS			
	All Resistors		RD1/8PM□□□J
OTHERS			
	CN2201,CN2202 10P SOCKET		KP200IA10L

SYSTEM CONTROL ASSY (AWZ5998)

SEMICONDUCTORS			
	IC3403		LH5268AN1TLL
	IC3402		PD5320A
	IC3404		TC74HC02AP
	IC3401		TC74HC123AP
	Q3409		2SA1515
	Q3403 ,Q3411		2SA933S
	Q3401 ,Q3402 ,Q3404 -Q3408		2SC1740S
	Q3412 ,Q3413		2SC1740S
	Q3410 ,Q3414		XDA124ES
	Q3415		XDC124ES
	D3402 -D3407 ,D3413 -D3421		HSS104-02
	D3423 -D3429		HSS104-02
	D3401 ,D3408 -D3411		MTZJ6.8
	D3412		RD3.0ESB1
COIL			
	L3401		LAU220K
CAPACITORS			
	C3408 (47mF/5.5)		ACH1246
	C3416		CEAS100M50
	C3407		CEAS101M10
	C3413		CEAS101M50
	C3417		CEAS2R2M50
	C3404 ,C3409 ,C3414 ,C3419		CEAS470M25
	C3401 ,C3403		CKCYB102K50
	C3402 ,C3405 ,C3406 ,C3411 ,C3412		CKCYF103Z50
	C3415 ,C3418		CKCYF103Z50
	C3410		CKCYF473Z50
RESISTORS			
	R3419		RD1/2PMFL220J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	X3401 CERAMIC RESONATOR (4.00MHz)		ASS1025
	JACK		BKN1005
	CN3405,CN3406 JACK		AKN-207
	CN3403 JACK		AKN1028
	CN3401 PLUG 8-P		KM250MA8B
	CN3402 16P SOCKET		KP200IA16L

PHOTO DIODE ASSY (AWZ7657)

SEMICONDUCTORS			
	IC2602		PD410PI
	IC2601		PFC502
	IC2603		SBX8025-H
	Q2602		2SC2712
	Q2601		2SK302
COIL			
	L2601		LAU221K
CAPACITORS			
	C2602		CCSQCH181J50
	C2604		CCSQCH820J50
	C2607		CEAL470M6R3
	C2605		CKSQYB103K50
	C2603		CKSQYB473K50
	C2601 ,C2606		CKSQYF104Z25
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
	LED HOLDER(PLS)		AMR7040

RF AMP ASSY (AWZ7658)

SEMICONDUCTORS			
NSP	IC2501		
NSP	IC2502,IC2504		
	D2501 -D2503		1SS352
COILS			
	L2501 ,L2502		LAU221K
CAPACITORS			
NSP	TC2501		
NSP	C2520		
NSP	C2514		
	C2501		CEAL100M6R3
	C2508		CEAL101M6R3
	C2503		CEAL2R2M35
	C2504		CEALR10M50
	C2507		CKSQYB103K50
	C2513		CKSQYB104K25
	C2502 ,C2506		CKSQYB473K50
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
NSP	X2501 CERAMIC RESONATOR		

FRONT CONTROL ASSY (AWZ6002)

SEMICONDUCTORS			
	IC2842		M5218AL
	IC2841		PD5136
	Q2842		2SA933S
	Q2841 ,Q2843		2SC1740S
	D2842		AEL1152
	D2843 ,D2844 ,D2846 ,D2847		HSS104-02
	D2841		MTZJ3.0
	PC2841		U5C-08SC
SWITCHES			
	S2841 -S2852		ASG1034
CAPACITORS			
	C2841 ,C2842		CCCSL221J50
	C2849		CEAS221M10
	C2848		CEJA100M35
	C2846		CEJA2R2M50
	C2844		CEJA330M25
	C2843		CFTXA104J50
	C2850		CKCYF103Z50
	C2847		CKDYB472K50
	C2845		CKDYF473Z50
RESISTORS			
	R2849		RD1/2PM561J
	R2857		RD1/2PMF820J
	R2867		RD1/2PMFL470J
	VR2841 (47k)		ACP1045
	Other Resistors		RD1/8PM□□□J

Mark	No.	Description	Parts No.
OTHERS			
		X2841 CERAMIC OSCILLATOR (480kHz)	ASS1043
		CABLE HOLDER	AKT1012
		LED HOLDER	AMR1733
		J102 JUMPER WIRE	D15A05-200-2468
		CN2842 PLUG 3-P	KM250MA3
		CN2841 PLUG 5-P	KM250MA5B

FRONT INPUT ASSY (AWZ6003)

SEMICONDUCTORS			
		Q5001 -Q5003	2SC1740S
		D5001 ,D5002	MTZJ15
CAPACITORS			
		C5001 -C5003 ,C5005	CEAS470M25
		C5006	CKCYF473Z50
RESISTORS			
		R5017	RD1/2PMFL101J
		Other Resistors	RD1/8PM□□□J
OTHERS			
		PIN JACK(1P)	AKB1111
		PIN JACK(1P)	AKB1112
		PIN JACK(1P)	AKB1113
		SOCKET	AKP1051
		CN5005 PLUG 9-P	KM250MA9

IR RECEIVER ASSY (AWZ6004)

SEMICONDUCTORS			
		Q2871	2SC1740S
COIL			
		L2871	LAU221K
CAPACITOR			
		C2871	CEJA101M10
RESISTORS			
		All Resistors	RD1/8PM□□□J
OTHERS			
		CABLE HOLDER	AKT1012
		SHIELD CASE A(MET)	ANK7009

PRO S.G ASSY (AWZ6005)

SEMICONDUCTORS			
		IC2226	NJM4558DXP
		Q2226	2SC1740S
CAPACITORS			
		C2227 ,C2228	CEAS101M10
		C2226 ,C2229	CEAS101M25
		C2232	CKCYF102Z50
		C2230	CKCYF473Z50
RESISTORS			
		All Resistors	RD1/8PM□□□J
OTHERS			
		CN2226 6P SOCKET	KP200IA6L

CENTER SP SW ASSY (AWZ6006)

SEMICONDUCTORS			
		IC2921	MC14066BCP
		Q2924 -Q2926	2SA933S
		Q2921 -Q2923 ,Q2927	2SC1740S
		D2921 -D2926	HSS104-02
CAPACITORS			
		C2923	CEAS2R2M50
		C2924	CEAS470M25
		C2925	CKCYF103Z50
RESISTORS			
		All Resistors	RD1/8PM□□□J
OTHERS			
		CN2921 11P SOCKET	KP200IA11L

SUB RECEIVE ASSY (AWZ6007)

SEMICONDUCTORS			
		IC1351	M5223P
CAPACITORS			
		C1351 -C1353	CKCYB103K50
		C1354	CKCYX104M16
RESISTORS			
		All Resistors	RD1/8PM□□□J
OTHERS			
		CABLE HOLDER	AKT1012
		SHIELD CASE B(MET)	ANK7010

EXT. SP ASSY (AWZ6008)

OTHERS			
		SPEAKER TERMINAL 4-P	AKE1030
		CN2911 PLUG 4-P	KM250MA4

CONVERGENCE PD ASSY (AWZ5991)

SEMICONDUCTORS			
		Q2806	2SA933S
		Q2801 -Q2805 ,Q2807 ,Q2808	2SC1740S
		D2801 (LED : RED)	AEL1099
		D2802 -D2805	HSS104-02
CAPACITORS			
		C2806	CEANP010M50
		C2803	CEAS100M50
		C2804 ,C2805	CEAS101M10
		C2801	CEAS221M10
		C2802	CEAS2R2M50
RESISTORS			
		All Resistors	RD1/8PM□□□J
OTHERS			
		CN2801 5P SOCKET	KP200IA5L

P IN P ASSY (AWZ5992)

SEMICONDUCTORS			
		IC3001	HA11569FS
		IC3002	HD49412FS
		IC3003	HM53461ZP-12
		IC3202	MC14066BCP
		IC3201	MC141622FU
		Q3001 ,Q3003 ,Q3016 ,Q3207 ,Q3208	2SA933S
		Q3214 ,Q3224 ,Q3226 ,Q3229	2SA933S
		Q3002 ,Q3008 ,Q3009 ,Q3012 -Q3014	2SC1740S
		Q3019 ,Q3201 -Q3206 ,Q3210 -Q3212	2SC1740S
		Q3215 ,Q3217 ,Q3219 -Q3223 ,Q3225	2SC1740S

Mark	No.	Description	Parts No.
	Q3227 ,Q3228 ,Q3230 ,Q3231		2SC1740S
	Q3004		XDC143ES
	D3001 ,D3005 ,D3006 ,D3203 -D3213		HSS104-02
	D3202		MTZJ15
	D3002 ,D3008 ,D3009 ,D3201		MTZJ6.8
	D3214 ,D3215		MTZJ6.8
COILS AND FILTERS			
	F3001 (F=14.3MH)		ATF1166
	F3002 (F=16.1MH)		ATF1167
	DL3001 (DELAY LINE)		ATN1022
	L3002 ,L3016 ,L3022 (BEAD FILTER)		ATX1008
	L3201		ATX1008
	L3004 ,L3012 ,L3201 ,L3208 ,L3210		LAU101K
	L3211		LAU101K
	L3013 ,L3014		LAU120K
	L3019		LAU150J
	L3204 -L3207		LAU150K
	L3009		LAU181K
	L3015		LAU1R2K
	L3008		LAU220K
	L3007		LAU221K
	L3001 ,L3003 ,L3006		LAU4R7K
	L3020 ,L3021 ,L3216		LAU4R7K
	L3215		LAU5R6K
	L3010		LAU680K
CAPACITORS			
	C3045 ,C3072		CCCCH100D50
	C3049 ,C3069		CCCCH220J50
	C3037 ,C3051		CCCCH470J50
	C3107		CCCCH560J50
	C3046		CCCCH680J50
	C3216 ,C3217		CCCSL080D50
	C3007 ,C3011 ,C3074 ,C3274		CCCSL101J50
	C3214 ,C3215 ,C3227		CCCSL121J50
	C3084		CCCSL150J50
	C3001 ,C3003 ,C3073 ,C3083 ,C3085		CCCSL151J50
	C3032		CCCSL220J50
	C3040 ,C3075 ,C3212 ,C3213		CCCSL330J50
	C3222 ,C3223 ,C3272		CCCSL330J50
	C3080 ,C3275		CCCSL470J50
	C3077 ,C3255		CCCSL820J50
	C3004 ,C3042 ,C3057 ,C3081 ,C3082		CEAS010M50
	C3242		CEAS010M50
	C3012 ,C3101 -C3104 ,C3106		CEAS0R1M50
	C3008 ,C3009 ,C3014 ,C3022 ,C3028		CEAS100M50
	C3043 ,C3055 ,C3059 ,C3066 ,C3070		CEAS100M50
	C3094 ,C3108 ,C3109 ,C3111		CEAS100M50
	C3115 ,C3116 ,C3201 ,C3209		CEAS100M50
	C3229 ,C3230 ,C3268		CEAS100M50
	C3002 ,C3005 ,C3018 ,C3086 ,C3238		CEAS101M10
	C3203 ,C3204 ,C3245 ,C3257		CEAS101M25
	C3220 ,C3225 ,C3228		CEAS102M6
	C3024 -C3026 ,C3052 ,C3067		CEAS2R2M50
	C3207 ,C3235 ,C3241 ,C3269 ,C3271		CEAS470M25
	C3276		CEAS470M25
	C3021 ,C3034 ,C3035 ,C3061		CEAS4R7M50
	C3020 ,C3039 ,C3048 ,C3065		CEASR22M50
	C3099		CEAS221M10
	C3078		CEAS221M16
	C3058		CEASR47M50
	C3205 ,C3224 ,C3264 ,C3270		CFTXA104J50
	C3277 ,C3278		CFTXA104J50
	C3017 ,C3047 ,C3050 ,C3054 ,C3239		CKCYB102K50
	C3265		CKCYB102K50
	C3273		CKCYB331K50
	C3266		CKCYB332K50
	C3100		CKCYB471K50
	C3029		CKCYB681K50
	C3010 ,C3013 ,C3019 ,C3023 ,C3027		CKCYF103Z50
	C3056 ,C3060 ,C3062 ,C3063 ,C3064		CKCYF103Z50
	C3098 ,C3110 ,C3114 ,C3117 ,C3202		CKCYF103Z50
	C3206 ,C3208 ,C3221 ,C3226		CKCYF103Z50
	C3232 -C3234		CKCYF103Z50
	C3236 ,C3237 ,C3246 ,C3253 ,C3256		CKCYF103Z50
	C3267		CKCYF103Z50
	C3006 ,C3030 ,C3038 ,C3044 ,C3071		CKCYX103M16
	C3076 ,C3079 ,C3113		CKCYX103M16
	C3112		CKCYX104M16
	C3053 ,C3068		CKCYX333M16
	C3031		CKCYX683M16
	C3015 ,C3036		CQMA152J50
	C3016 ,C3033		CQMA561J50
RESISTORS			
	R3232		RD1/2PMFL3R9J
	VR3002,VR3003 (470Ω)		ACP1039
	VR3001 (4.7k)		ACP1042
	Other Resistors		RD1/8PM□□□J
OTHERS			
	CABLE HOLDER		AKT1011
	CABLE HOLDER		AKT1012
	SHIELD CASE		ANK1202
	SHIELD PLATE		ANK1203
	X3003 ,X3004	CRYSTAL RESONATOR (3.579545MHz)	ASS1091
	X3001 ,X3002	CERAMIC RESONATOR (503kHz)	ASS1112

A CONNECTOR ASSY (AWZ5994)

OTHERS		
	CABLE HOLDER	AKT1007
	CABLE HOLDER	AKT1023
	J103 JUMPER WIRE	D15A09-075-2468
	J104 JUMPER WIRE	D15A11-075-2468
	CN2892 10P SOCKET	KP200IA10L
	CN2891 11P SOCKET	KP200IA11L

B CONNECTOR ASSY (AWZ5995)

OTHERS		
	CABLE HOLDER	AKT1007
	CABLE HOLDER	AKT1023
	CN2902 11P SOCKET	KP200IA11L
	CN2901 8P SOCKET	KP200IA8L

C CONNECTOR ASSY (AWZ5996)

OTHERS		
	CABLE HOLDER	AKT1011
	CABLE HOLDER	AKT1012
	J2 JUMPER WIRE	D15A05-150-2468
	J1 JUMPER WIRE	D15A13-150-2468
	CN3280 13P SOCKET	KP200IA13L
	CN3285 5P SOCKET	KP200IA5L

Mark	No.	Description	Parts No.
VM ASSY (AWZ5997)			
SEMICONDUCTORS			
	Q3311		2SA965
	Q3306		2SA985A
	Q3302 ,Q3307 -Q3310		2SC1740S
	Q3312		2SC2235
	Q3305		2SC2275A
	D3301 -D3304		HSS104-02
COILS AND FILTERS			
	L3301		LAU220K
CAPACITORS			
	C3309 ,C3310		CEAS010M50
	C3305		CEAS2R2M100
	C3301 ,C3303 ,C3315		CEAS470M25
	C3314		CEHAQ220M2C
	C3316		CKCYB102K50
	C3318		CKCYB472K50
	C3319 ,C3320		CKCYB561K500
	C3307 ,C3308 ,C3317		CKCYF103Z50
	C3313		CKDYF103Z500
	C3304 ,C3306		CQMA103K250
	C3312		CQMA104K250
RESISTORS			
	R3322		RD1/2PM2R7J
	R3318		RD1/2PMFL222J
	R3334 ,R3335		RD1/2PMFL2R2J
	R3315 ,R3317		RD1/2PMFL473J
	R3310		RD1/2PMFL560J
	R3321		RD1/2PMFL5R6J
	R3333		RD1/4PM561J
	R3323 ,R3324		RD1/4PMFL470J
	R3313		RD1/4PMFL2R2J
	R3319 ,R3320		RS1MMF331J
	Other Resistors		RD1/8PM□□□J
OTHERS			
	HEAT SINK M		ANH-697
	CN3303 PLUG 3-P		KM250MA3
	CN3304 PLUG 3-P		KM250MA3R
	CN3301 PLUG 7-P		KM250MA7
	SCREW		PBZ30P080FMC
RELAY DRIVE ASSY (AWZ5999)			
SEMICONDUCTORS			
	Q101		2SA933S
	Q102 ,Q103 ,Q114 ,Q180		2SC1740S
	D107 ,D108 ,D137 ,D142 ,D188		HSS104-02
CAPACITORS			
	C112		CEAS100M50
	C107 ,C115 ,C183		CEAS470M25
RESISTORS			
	All Resistors		RD1/8PM□□□J
OTHERS			
	CN106 8P SOCKET		KP200IA8L
SUB CONVERGENCE ASSY (AWZ6001)			
SEMICONDUCTORS			
	IC3551		NJM4558LD
	Q3551 ,Q3553 -Q3555 ,Q3557 ,Q3558		2SC1740S
	Q3560		2SC1740S
	Q3552 ,Q3556 ,Q3559		2SC3064
	D3559		HSS104-02
	D3551 -D3558		MTZJ12
CAPACITORS			
	C3551 ,C3554		CEAS101M10
	C3552 ,C3553		CKCYF473Z50
RESISTORS			
	All Resistors		RD1/8PM□□□J
OTHERS			
	CN3551 6P SOCKET		KP200IA6L
☆ POWER SUPPLY ASSY (AWV1499 and AWV1500)			
SEMICONDUCTORS			
	IC201 ,IC301		NJM4558DXP
	IC101 ,IC102		PC817CD
	Q204 ,Q206 ,Q305 ,Q306		2SA1145
	Q107 ,Q111 ,Q201		2SA933S
X NSP	Q301 ,Q302		
	Q108 ,Q113 ,Q202 ,Q209		2SC1740S
X NSP	Q303		
	Q109 ,Q203		2SC2705
X NSP	Q304		
	Q205 ,Q307		2SC3332
	Q210		2SC4256
	Q110 ,Q112 ,Q207 ,Q308		2SD1276A
	Q105 ,Q106		2SD1835
⚠	Q208 ,Q309		2SD2300
	Q104		2SK1168
⚠	D213 ,D306		11DF2FD
	D101 ,D102 ,D104 ,D105 ,D148		1SS145
	D183 ,D184		1SS145
	D145 ,D150		AEL1099
	D106		D5SBA60
	D214 ,D217 ,D307		ES1F
	D127 ,D129 ,D130		FMP-G12S
	D116 -D123 ,D125 ,D126		HSS104-02
	D139 -D141 ,D182 ,D186 ,D187		HSS104-02
	D203 -D212 ,D218 -D220		HSS104-02
	D303 -D305 ,D311 ,D312		HSS104-02
	D135		HZS18-1L
	D115 ,D138 ,D180 ,D181		HZS18L
	D103 ,D134 ,D136		HZS6B1L
	D124		HZS6C2L
	D215 ,D216 ,D309 ,D310		RD12ESB
	D316 ,D317		RD12ESB
	D201		RD39ESB4
X NSP	D301		
X NSP	D302		
	D202		RD5.1ESB2
	D133		RD5.1ESB3
	D128		RL2Z
	D185		RL4Z
	D308		RU1
	D132		RU4A
	D189		S5688G
COILS			
	L101 ,L102 (2mH)		ATF1118
	L103 (1UH)		ATH-133
	L201 (7UH) DUMMY F.B.T		ATL1053
⚠	L202		ATL1089
	L104 -L111 ,L114 -L117 (FERRITE BEAD)		ATX1023
	L301		LTA272J

Mark	No.	Description	Parts No.
TRANSFORMERS			
	T102		ATK1079
	T101		ATT1194
⚠	T201 ,T301		ATK1045
⚠X NSP	T302	(AWV1499)	
⚠X NSP	T302	(AWV1500)	
SWITCHES AND RELAYS			
	RY101 ,RY102		ASR1036
CAPACITORS			
	C101 ,C102	(0.22/AC250)	ACE1104
	C132		ACG-032
	C110 ,C111 ,C113 ,C114	(0.01/AC250)	ACG-501
	C105 ,C106 ,C108 ,C109	(4700p/AC400)	ACG-505
	C222	(1000P/2k)	ACG1001
	C323	(680P/2k)	ACG1024
	C119 ,C122 ,C152 ,C219 ,C220	(4700p /2K)	ACG1028
	C120	(4.7/250)	ACH-378
⚠	C228 ,C319	(10/160)	ACH1117
	C135	(560/160)	ACH1146
	C118	(470/200)	ACH1147
	C116	(820/200)	ACH1148
	C312 ,C317		CCCSL101J50
	C214 ,C218 ,C314		CCCSL101K500
	C229		CCCSL181K500
	C129 ,C130 ,C156 ,C157 ,C181		CCCSL221K500
	C215		CEAS010M100
	C127 ,C202		CEAS010M50
	C304 ,C321		CEAS100M50
	C207		CEAS221M16
	C185		CEAS221M25
	C153		CEAS470M25
	C148 ,C205 ,C217 ,C306		CEHAQ010M50
	C211 ,C310		CEHAQ100M2C
	C145 ,C146 ,C149 ,C203 ,C204		CEHAQ100M50
	C327		CEHAQ100M50
	C103		CEHAQ102M25
	C313		CEHAQ220M16
	C325		CEHAQ220M25
	C322		CEHAQ220M2C
	C305 ,C309		CEHAQ221M10
	C150 ,C302		CEHAQ221M16
	C138		CEHAQ222M16
	C134		CEHAQ222M35
	C182		CEHAQ222M50
	C213		CEHAQ330M16
	C142		CEHAQ331M35
	C184 ,C187		CEHAQ332M16
	C133 ,C137		CEHAQ332M35
	C318		CEHAQ4R7M50
⚠	C324		CFPHW123H3D
	C225		CFPHW153H3D
⚠	C226		CFPMW824J2D
	C221		CFTYA474J50
	C301 ,C320		CKCYB102K50
	C216		CKCYB102K500
	C308		CKCYB331K50
	C210		CKCYB331K500
	C316		CKCYB392K500
	C147		CKCYB681K50
	C104 ,C307 ,C311		CKCYF103Z50
	C315		CKCYF222Z500
	C140 ,C141 ,C144 ,C151 ,C303		CKCYF473Z50
	C326		CKCYF473Z50
	C212		CKDYF103Z50
	C139 ,C143		CKDYF103Z500
	C201		CKDYF473Z50
	C126		CQMA102J50
	C125 ,C209 ,C227		CQMA103J50
	C206		CQMA223J50
	C208		CQMA471J50
	C121		CQMA473J50
	C223		CQPA683J200
RESISTORS			
	R102 ,R103	(2.2M, 1/2W)	ACN-208
	R349	(47, 1/2W)	ACN-225
	R247	(33k, 1/2W)	ACN1011
	R145 ,R158 ,R159	(1, 5W)	ACN1032
	R329 ,R346		RD1/2PM122J
	R257 ,R328		RD1/2PM152J
X NSP	R327		
	R321		RD1/2PM821J
	R126 ,R240		RD1/2PMFL103J
⚠	R326		RD1/2PMFL221J
	R252		RD1/2PMFL223J
	R123 ,R143 ,R166 ,R170 ,R234		RD1/2PMFL470J
	R336		RD1/2PMFL472J
⚠	R235		RD1/2PMFL473J
X NSP	R337		
X NSP	R307		
⚠	R344		RD1/4PMFL2R2J
	R232		RD1/4PMFL392J
⚠	R204 ,R218 ,R253 ,R302 ,R314		RD1/4PMFL3R9J
⚠	R222 ,R320		RD1/4PMFL470J
	R236 ,R338		RD1/4PMFL471J
⚠	R347 ,R348		RN1/2PC3902F
X NSP	R340		
	R121		RN1/4PC1001F
	R134 ,R136		RN1/4PC1603F
	R156		RN1/4PC2101F
	R157		RN1/4PC2431F
	R133		RN1/4PC3601F
	R122		RN1/4PC8200F
	R239		RS1LMF010J
	R142		RS1LMF100J
	R229		RS1LMF153J
	R180		RS1LMF272J
	R118		RS1LMF473J
⚠	R351		RS1LMFR22J
	R141		RS2LMF223J
	R230		RS3LMF010J
	R241 ,R242 ,R245		RS3LMF104J
⚠	R343		RS3LMF151J
	R209		RS3LMF153J
⚠	R358		RS3LMF822J
	R119 ,R120		RS3LMFR22J
⚠	R341		RS3LMFR47J
⚠	R331		RS3LMFR68J
	R128 ,R129		RT10PZ180K
X NSP	R304		
X NSP	R305 ,R308 ,R315		
X NSP	R312		
X NSP	R317		
X NSP	R318		
X NSP	R309 ,R313		
X NSP	R306 ,R319		
X NSP	R316		
X NSP	R342		
	VR101		VRTS6VS102
X NSP	VR301		
X NSP	VR302		

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
		Other Resistors	RD1/8PM□□□J				
OTHERS							
⚠		FU104 (6.3A/125V)	AEK-309				
⚠		FU101 (8A/125A)	AEK1002				
⚠		FU102 ,FU105 (4.0 A/125V)	AEK1018				
		CN202 PLUG 3-P	AKM1055				
		CN203 -CN205 PLUG 6-P	AKM1072				
		CN102 PLUG 2-P	AKM1127				
		CN201 PLUG 10-P	KM200IA10				
		CN103 11P PLUG	KM200IA11				
		CN105 8P PLUG	KM200IA8				
		CN106 PLUG 3-P	KM250MA3				
		CN301 PLUG 5-P	KM250MA5R				
		CN104 PLUG 9-P	KM250MA9				
		H101 -H104 ,H107 -H110 FUSE CLIP	AKR1003				
		FUSE CLIP	ANH-697				
		MICA SHEET	AEP-056				
		BINDER	AEP-215				
		HEAT SINK	ANH-880				
		HEAT SINK B	ANH1021				
		SHIELD CASE	ANH1165				
		HEAT SINK	ANH1371				
		HEAT SINK A	ANH1394				
		SW HEAT SINK	ANH1505				
		SCREW	ABA-234				
		SCREW	ABA1099				
		SCREW	ABZ30P100FMC				
		SCREW	BBZ30P080FCU				
		SCREW	BBZ30P080FZK				
		SCREW	PBZ30P080FMC				
		SCREW	PPZ40P120FMC				
		SCREW	VPZ40P100FMC				

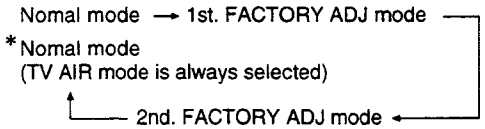
9. ADJUSTMENTS

- In this section,all items required to be adjusted on this unit are described in the order of the adjustments to be performed. (See section 9.2)
  For the adjustment items of each assembly,see section 9.1.
- When replacing the assemblies,be sure to use an assembly which works completely.
- Characters in parentheses ( ) beside an adjustment point are an abbreviation of the assembly containing that adjustment point.
  - A : AV I/O ASSY
  - C : CONVERGENCE ASSY
  - F : FRONT CONTROL ASSY (For PRO-98)
  - P : P IN P ASSY
  - S : POWER SUPPLY ASSY
  - U : U-COM ·TUNER ASSY
  - VR1 : Focus variable resistor(VR1)
- The adjustment points and test points are shown in Fig.9-6 and 9-7 for each assembly.
- A test signal should be input to the laser disc terminal on the rear panel unless otherwise noted.
- Set the picture quality to standard unless otherwise noted.

● FACTORY ADJ mode

1.Entering FACTORY ADJ mode

The FACTORY ADJ mode of this unit is divided into the 1st FACTORY ADJ mode for performing adjustments and 2nd FACTORY ADJ mode used in the manufacturing process of the factory.
Each time the S4107(SD-P5185-K and 83 family) or S2847(PRO-98) switch is pressed through the small hole at the center of the front panel with a thin rod, the mode will change cyclically as follows.



* : When the mode is changed from FACTORY ADJ mode into nomal mode, the items are changed into the following;

- INPUT SELECTOR : TV
- ★ TV-CATV mode : AIR
- ★ Antenna selector : A
- ★ Closed caption and P IN P : OFF
- Picture quality : STANDARD
- Password code for channel lock : 0000

(For the password code,see pages 182 and 183.)

- Cnvergence adjustment:Initial position of user adjustment

Note:
The items marked with ★ are changed into the previous position when the MAIN POWER SW is OFF or AC power plug is unplugged from a wall socket.

The 2nd FACTORY ADJ mode is used in the factory and not for servicing.

2. Operating 1st. FACTORY ADJ mode

When the unit enters 1st. FACTORY ADJ mode,ADJUSTMENT RANGE mode is first obtained.Every time the MUTE key on the remote control unit is pressed,the operation mode is switched from ADJUSTMENT RANGE mode to ADJUSTMENT OFFSET mode,ADJUSTMENT CONVERGENCE mode(not used),ADJUSTMENT GAME mode and ADJUSTMENT MPX mode,as shown in Fig.9-4.These modes are switched cyclically.
By pressing the following keys, the ADJUSTMENT mode can be switched directly.

- MENU key : ADJUSTMENT RANGE mode
- ▼key : ADJUSTMENT OFFSET mode
- SET key : ADJ CONVERGE mode
- P IN P key : ADJUSTMENT MPX mode
- ◀key : Not used (ADJ CONVERGE AUTO)

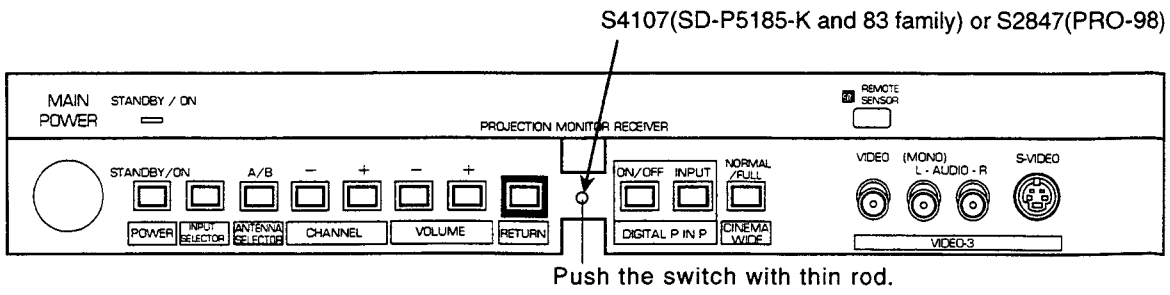


Fig.9-1 Entering FACTORY ADJ mode

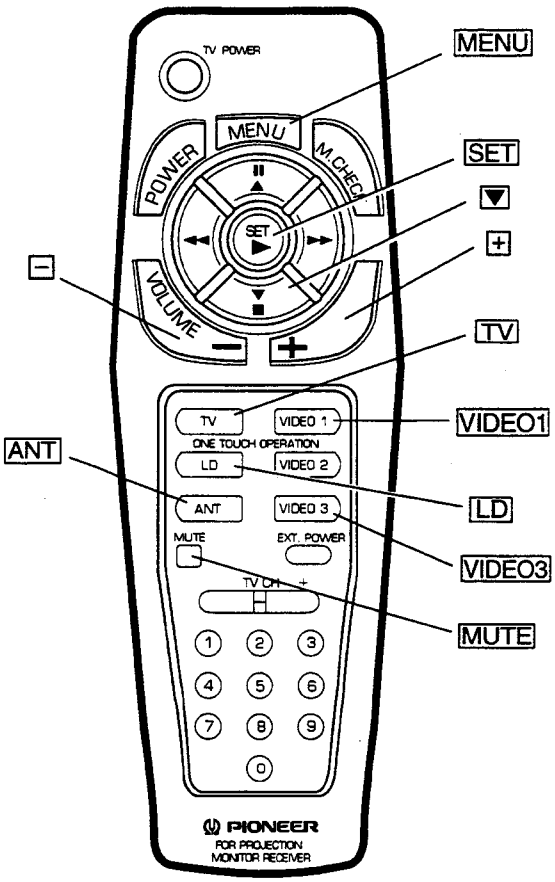


Fig. 9-2 Key indications on the remote control unit of AXD1415(CU-SD092 : SD-P5185-K and PRO-98)

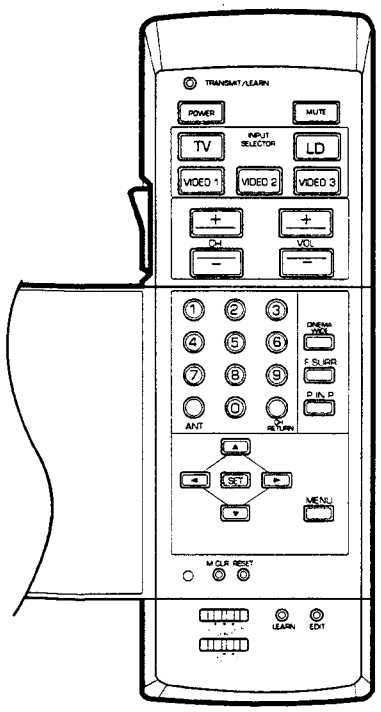


Fig. 9-3 Key indications on the remote control unit of AXD1416 (CU-SD091 : SD-P5183-K)
(The upper cover is opened.)

①ADJUSTMENT RANGE mode

The ADJUSTMENT RANGE mode is to check how much the picture and sound quality change.

● Function of the ADJUSTMENT RANGE mode

In this mode,adjustment functions are assigned to the numeric keys [1] through [5] of the remote control unit,as shown in Fig.9-4.Each numeric key corresponds to a particular adjustment function.Press the numeric key corresponding to the desired function and the selected function name will be displayed.To change the setting value,press the same key repeatedly and the setting value will change from CNT to MIN and MAX cyclically.When the TINT adjustment is selected,the meaning of the setting values change as follows:

● TINT

CNT :Center
↓
MIN :The color to purple
↓
MAX :The color to green

By pressing the numeric keys [7] to [9] and [0], the VOLUME can be set to the following values.

[7] Key : VOL20
[8] Key : VOL30
[9] Key : VOL40
[0] Key : VOL 0

②ADJUSTMENT OFFSET mode

(PIONEER's standard setting mode)

ADJUSTMENT OFFSET mode is to set the standard picture quality (**PIONEER**'s standard)for a normal picture.

● Function of the ADJUSTMENT OFFSET mode

To adjustment picture quality,press one of the numeric keys [1] through [5],and an item to be adjusted such as color,sharpness,etc.,assigned to the pressed button is selected and will appear on the screen,as shown in Fig.9-4. To change the setting value,press the VOL (⊞, ⊟) keys until the desired value appears on the screen.
The setting picture quality on this mode will become the picture quality when setting the AV MEMORY to STANDARD on the normal screen.

③ADJ.CONVERGENCE mode

ADJ.CONVERGENCE mode is for setting convergence.
For details,see section "9.4 CONVERGENCE ADJUSTMENTS."

④ADJUSTMENT MPX mode

This mode is used for adjusting the TV tuner MPX decoder section.

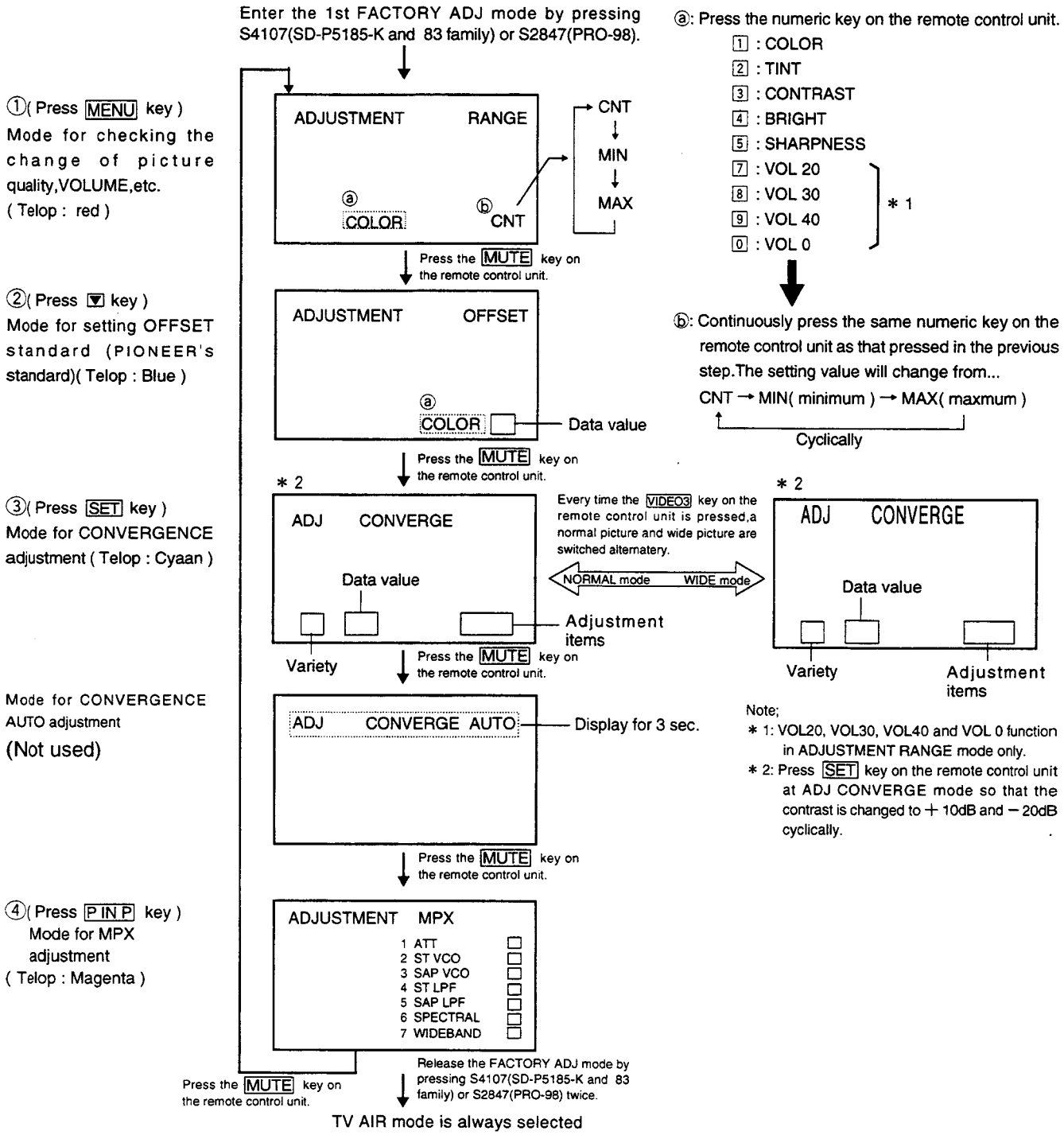


Fig. 9-4 Operating FACTORY ADJ mode

9.1 ADJUSTMENTS REQUIRED WHEN AN ASSEMBLY IS REPAIRED OR REPLACED

Note: For the method of adjustment,see section "9.2 Adjustment method." A number in parentheses indicates the step number in section "9.2 Adjustment method."

9.1.1 When POWER SUPPLY ASSY was Repaired

1. (Step 1) 135V power supply adjustment
2. (Step 7) Focus VR adjustment
3. (Step 9) Horizontal size adjustment
4. (Step 10) Convergence adjustment
5. (Step 12) White balance adjustment

9.1.2 When POWER SUPPLY ASSY was Replaced

● Adjustments of (Step 9) , (Step10) and (Step12)

9.1.3 When U-COM ·TUNER ASSY was Repaired

(1)When the video block was repaired
1. (Step3) Brightness adjustment
2. (Step12) White balance adjustment
3. (Steps16 through19) Pioneer's standard settings

(2)When the microcomputer block was repaired
1. (Step2) Contrast coarse adjustment
2. (Step3) Brightness adjustment
3. (Step13) Test-cross H-center position adjustment
4. (Step14) Blue tailing adjustment
5. (Step16 throgh19) Pioneer's standard settings

Reset the other items such as the tuner preset channels,convergence,etc. which should be set by the user.

(3)When the tuner block was repaired
1. (Step15) Tuner block adjustment

(4)When the audio block was repaired
No adjustment is required.

9.1.4 When U-COM ·TUNER ASSY was Replaced

All the above adjustments except for the test-cross H-center position adjustment and tuner adjustment are required.

9.1.5 When CONVERGENCE ASSY was Repaired or Replaced

1. (Step 8) Vertical size adjustment
2. (Step 9) Horizontal size adjustment
3. (Step10) Convergence adjustment

9.1.6 When R.,G.or B.CRT DRIVE ASSY was Repaired or Replaced

● Check the white balance.If the white balance is not correct,perform white balance adjustment (Step12).

9.1.7 When P IN P ASSY was Repaired

1. (Step20) Y-signal level adjustment of sub-picture
2. (Step21) TINT adjustment of sub-picture
3. (Step22) Color level adjustment of sub-picture
4. (Step23) Write clock adjustment
5. (Step24) Read clock adjustment

9.1.8 When P IN P ASSY was Replaced

● No adjustment is required

9.1.9 When AV I/O ASSY was Repaired

● (Step11) Wide mute1 adjustment

9.1.10 When AV I/O ASSY was Replaced

● No adjustment is required

9.1.11 When FRONT CONTROL ASSY was Repaired (PRO-98 only)

● (Step25) DPO sensitivity adjustment

9.1.12 When FRONT CONTROL ASSY was Replaced

● No adjustment is required.

9.1.13 When RF AMP ASSY was Repaired (SD-P5185-K and PRO-98 only)

● (Step26) Sensitivity of remote control signal receiver adjustment

Note:
As this adjustment requires the unit checker used in factories,it cannot be performed at the servicing site.
This adjustment must be performed if RF AMP ASSY parts with the reference numbers shown below are replaced.
Therefore do not replace these parts the whole RF AMP ASSY.

Reference No. of Parts Requiring Adjustment when Replaced.
IC2501 , IC2502 , IC2504
TC2501
C2514 , C2520
X2501

9.1.14 When RF AMP ASSY was Replaced

● No adjustment is required.

9.1.15 When CRT ASSY R,G or B was Replaced

Notes:
- For details on replacing a CRT ASSY,see section "10. Replacing the CRT ASSY."
- When one or two tubes were replaced,perform the adjustment referring to the tube not replaced.If a CRT ASSY for a color other than green was replaced,be sure to adjust the following items referring to the green.

1. (Step4) Deflection yoke lean adjustment
2. (Step5) Screen center adjustment
3. (Step7) Focus VR adjustment
4. (Step10) Convergence adjustment
5. (Step12) White balance adjustment
6. (Step16 through 19) Pioneer's standard settings

9.1.16 When Lens ASSY was Replaced

1. (Step6) Focus adjustment of Lens assembly
2. (Step10) Convergence adjustment

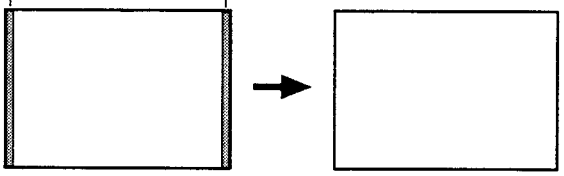
9.1.17 When Other ASSY was Repaired or Replaced

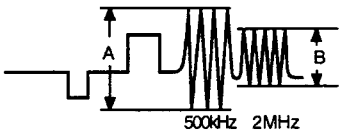
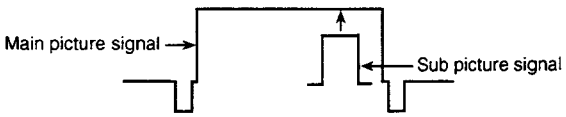
● No adjustment is required.

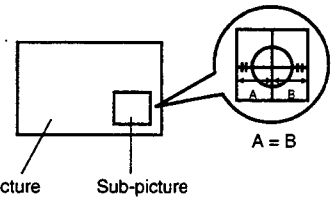
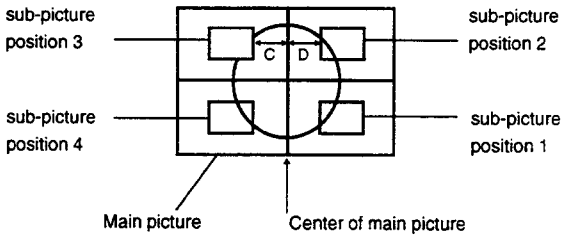
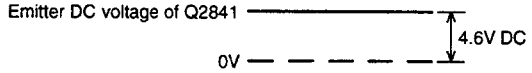
9.2ADJUSTMENT METHOD

- Adjustment points and test points are shown in Fig.9-6 and 9-7.
- Perform the adjustment for standard picture quality unless otherwise noted.
- For information on 1st FACTORY ADJ mode,see pages 113 through 115.

STEP NO.	Adjustment Item	Input Signal	Adjustment point	Adjustment Prdcedure
1	135V power supply adjustment	Color bar	VR101(S)	Adjust the voltage at D132 cathode on the POWER SUPPLY ASSY to 135V ± 1V.
2	Contrast coarse adjustment	—	CONTRAST (remote control unit)	Note:Perform this adjustment only when a data memory IC (IC901:AT24C08-10PC) on a U-COM·TUNER ASSY was replsced or when the contrast of ADJUSTMENT OFFSET in FACTORY ADJ mode is extremely shifted. ● Activate ADJUSTMENT OFFSET mode of 1st FACTRY ADJ mode.(telop:blue) ● Press the [3] key on the remote control unit to select CONTRAST. ● Press the VOL ⊞ or ⊟ keys so that the telop shows about 0.
3	PIONEER 's standard settings / Brightness adjustment	Cross hatch	BRIGHT (remote control unit)	● Pless the [4] key on the remote control unit to select BRIGHT in ADJUSTMENT OFFSET mode of 1st FACTORY ADJ mode. ● Adjust the cut off level at TP-GK on the G.CRT DRIVE ASSY to 190V DC ± 1V. cut off level (190V DC) 
4	Deflection yoke lean adjustment	Cross signal (or generate a test cross signal for convergence adjustment by applying a free signal.)	Deflection yoke mounting position of replaced CRT assembly (left and right lean)	Note1: This adjustment should be done in NORMAL mode. Note2: This adjustment is required when a CRT assembly and deflection yoke were replaced. ● Loosen the fixing screw of the deflection yoke for the color to be replaced and turn the adjustment point right and left so that the lean parts of the vertical and horizontal lines at the center of the screen align with the lines of a color not replaced. ● After adjustment, tighten the fixing screw for the daflection yoke.
5	Screen center adjustment	Cross signal (or generate a test cross signal for convergence adjustment by applying a free signal.)	Centering magnet of the deflection yoke of replaced CPT assembly (see Fig.9-7)	Note1: This adjustment should be done in NORMAL mode. Note2: This adjustment is to adjust the center point of the screen when a CRT assembly and deflection yoke were replaced. For red or blue adjustment,turn 1st FACTORY ADJ mode ON and then OFF to place the convergence POSITION at the center of the adjustable range. ● Move the centering magnet of the deflection yoke for the replaced color so that the horizontal and vertical lines at the center of the screen align with the lines for a color not replaced.
6	Focus adjustment of Lens assembly	Cross hatch	Lens assembly mounted to replaced CRT assembly	To the adjust the lens assembly, remote the screen frame block, and attach a piece of translucent paper such as tracing paper with tape as shown in Fig.9-7. ● Move the lens assembly left and right as shown in Fig.9-7 until the best focusing is obtained.
7	Focus VR adjustment	Cross hatch	Focus VR (VR1)	● Turn the forcus VR for best focusing. ● Repeat adjustments for the lens assembly and focus VR.

STEP NO.	Adjustment Item	Input Signal	Adjustment point	Adjustment Prdcedure
8	Vertical size adjustment	Monoscope or general broadcasting	NORMAL: VR2601(C), WIDE: VR2602(C)	● When a monoscope signal is used, adjust the size so that the following value is obtained. Normal mode : 90% ± 3%, Wide mode : 77% ± 3% When general broadcasting is used, adjust the size so that the picture is completely displayed on the screen. Note: Perform the adjustment for a NORMAL screen,and then for a WIDE screen.
9	Horizontal size adjustment	Monoscope or general broadcasting	NORMAL: VR2307(C), WIDE: VR2308(C)	● When a monoscope signal is used, adjust the size so that the following value is obtained. Normal mode : 94% ± 2%, Wide mode : 90% ± 3% When general broadcasting is used, adjust the size so that the picture is completely displayed on the screen. Note: Perform the adjustment for a NORMAL screen,and then for a WIDE screen.
10	Convergence adjustment	Cross hatch	Adjustment using the remote control unit	● Adjust so that the green cross hatch display normally appears on the screen with only the green CRT drive activated. ● Adjust the red line so that it aligns with the green line on the cross hatch screen with the green and red CRT drives activated. ● Adjust the blue line so that it aligns with a green line on the cross hatch screen with the green and blue CRT drives activated. Note:For details on the convergence adjustment, see section "9.4 CONVERGENCE ADJUSTMENT"
11	Wide mute1 adjustment ·SUB U-COM adjustment 1st ·SUB U-COM adjustment 2nd	Free video signal	VR1801(A) VR1812(A)	● Set the CINEMA WIDE mode to FULL CINEMA. ● Adjust VR1812 so that the left side of the image disappears. ● Turn VR1812 in the opposite direction of the above until the left side of the image appears. ● Adjust VR1801 so that the right side of the image disappears. ● Turn VR1801 in the opposite direction of the above until the right side of the image appears. Left side Right side  The image disappears screen The image appears screen
12	White balance adjustment	Color bar signal without color signal	ScreenVR(VR1), VR601(U) (Blue drive VR) VR602(U) (Red drive VR)	● Adjust the screen VR (red or blue) so that the dark part of the screen becomes gray. Do not move the screen VR(green). ● Adjust the drive VRs(red or blue) so that the bright part of the screen becomes white.
13	Test cross H-center position adjustment	Free video signal	TC901(U)	● Set the test cross screen for adjusting the convergence position.(For user) ● Adjust the position so that the test cross is placed at the center of the screen.
14	Blue tailing adjustment	Cross signal	VR603(U)	● Adjust the SG output of the input cross signal to maximum level. ● Set the contrast to maximum using the remote control unit. ● Turn VR603 fully counterclockwise. (Blue tailing appears) ● Adjust the vertical line of the cross on the screen so that blue tailing disappears.

<table>
<tr><th>STEP NO.</th><th colspan="2">Adjustment Item</th><th>Input Signal</th><th>Adjustment point</th><th>Adjustment Prdcedure</th></tr>
<tr><td>15</td><td colspan="2">Tuner block adjustment</td><td colspan="3">The audio section in the tuner block is adjusted.
For the items to be adjusted, see section "9.5 TUNER SECTION."</td></tr>
<tr><td colspan="6">● Set to the ADJUSTMENT OFFSET mode of 1st FACTORYADJ mode (Telop:Blue)</td></tr>
<tr><td>16</td><td rowspan="4">PIONEER's standard settings</td><td>Sharpness adjustment</td><td>Multiburst</td><td>SHARPNESS (Remote control unit)</td><td>● Adjust the ratio of A (peak-to-peak value of 500kHz) to B (peak-to-peak value of 2 MHz)at TP-13 on the TUNER-VIDEO ASSY to A : B = 1.55 : 1 . Adjustment screen to optimum condition.
A : B = 1.55 : 1  </td></tr>
<tr><td>17</td><td>Color adjustment</td><td rowspan="2">Color bar</td><td>COLOR (Remote control unit)</td><td>Adjustment screen to optimum condition.</td></tr>
<tr><td>18</td><td>Tint adjustment</td><td>TINT (Remote control unit)</td><td>Adjustment screen to optimum condition.</td></tr>
<tr><td rowspan="2">19</td><td rowspan="2">Contrast adjustment</td><td>CONTRAST (Remote control unit)</td><td>Adjustment screen to optimum condition.</td></tr>
<tr><td>Normal video signal</td><td>—</td><td>At the TP-BK of B.CRT assy, check that the signal is shaped as shown below.
 
Shapely waveform Shapeless waveform</td></tr>
<tr><td colspan="6">● Set the FACTORY ADJ mode to OFF and picture-in-picture function to ON.
● Supply the same signal to both the main and sub pictures.</td></tr>
<tr><td>20</td><td colspan="2">Y-signal level adjustment of sub-picture</td><td>100% white</td><td>VR3002(P)</td><td>Observe the waveform at TP3501(Y) of the C CONNECTOR ASSY and adjust the 100% white position of the sub-picture so that it aligns with that of the main-picture.
  </td></tr>
<tr><td>21</td><td colspan="2">TINT adjustment of sub-picture</td><td rowspan="2">Color bar</td><td>VR3001(P)</td><td>Adjust the TINT of the sub-picture to optimum condition.</td></tr>
<tr><td>22</td><td colspan="2">Color level adjustment of sub-picture</td><td>VR3003(P)</td><td>Adjust the color level of the sub-picture to optimum condition.</td></tr>
</table>

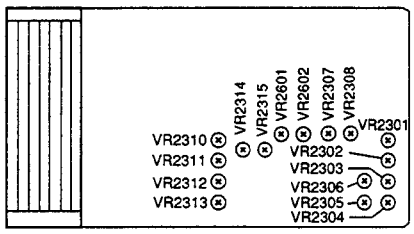
STEP NO.	Adjustment Item	Input Signal	Adjustment point	Adjustment Prdcedure
23	Write clock adjustment	Monoscope signal	F3001(P)	Adjust the position so that the center of monoscope signal is placed at the center of the sub-picture. 
24	Read clock adjustment		F3002(P)	● Shift (* 1) the position of sub-picture and measure the margins C at position 3 and D at position 2 from center of main-picture. ● Adjust the margins C and D so that the margins to equal. 
25	DPO sensitivity adjustment (PRO -9 8 only)	—	VR2841(F)	Note: This adjustment is to set the sensitivity of the DPO sensor. adjust the value as per the customer's request. The adjusting procedure at the factory is shown below for your reference. ● Illuminate the DPO sensor from the rectangular position to the sensor surface using an incandescent lamp with luminance of 50 lux at the sensor surface. ● Adjust the emitter voltage of Q2841 on the FRONT CONTROL ASSY to 4.6V ± 0.3V. 
26	Sensitivity of remote control signal adjustment (PRO -9 8 only)	—	TC2501(R)	Note: As this adjustment requires the unit checker used in factories,it cannot be performed at the servicing site. This adjustment must be performed if RF AMP ASSY parts with the reference numbers shown below are replaced. Therefore do not replace these parts the whole RF AMP ASSY. Reference No. of Parts Requiring Adjustment when Replaced. IC2501 , IC2502 , IC2504 TC2501 C2514 , C2520 X2501

* 1: To shift the position of the sub picture, use the MENU screen and remote control unit as the following:

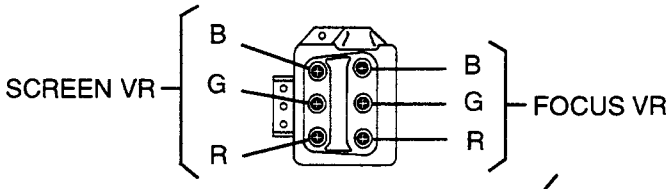
● Press [MENU] key → Set **PINP** by ◀ , ▶ keys → Press [SET] key —┐
Shift the position by [SET] key ← Set **SHIFT** by ▲ , ▼ keys ←┘

FRONT CONTROL ASSY (PRO-98)

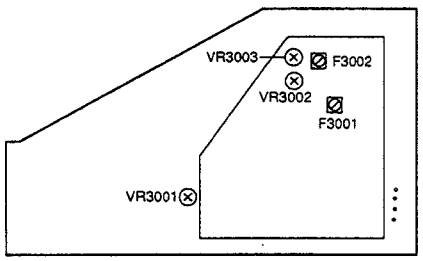
CONVERGENCE ASSY

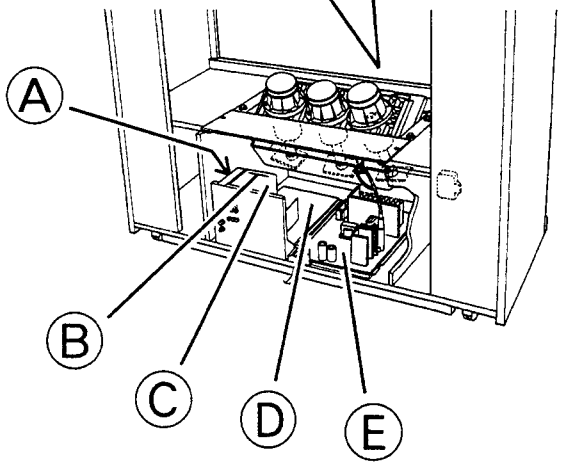


FOCUS VR (VR1)

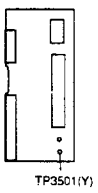


Ⓐ P IN P ASSY

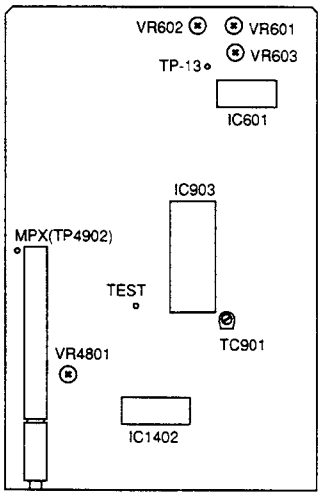




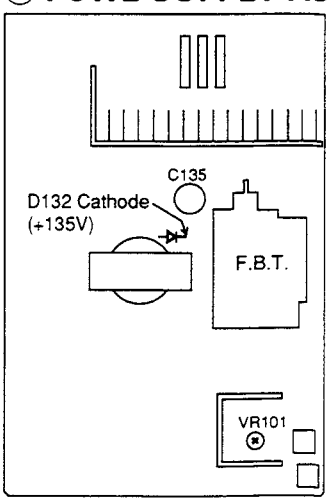
Ⓑ C CONNECTOR ASSY



Ⓓ U-COM・TUNER ASSY



Ⓔ POWE SUPPLY ASSY



Ⓒ AV I/O ASSY

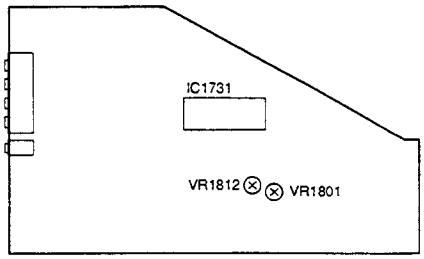


Fig.9-5 Adjustment point(1)

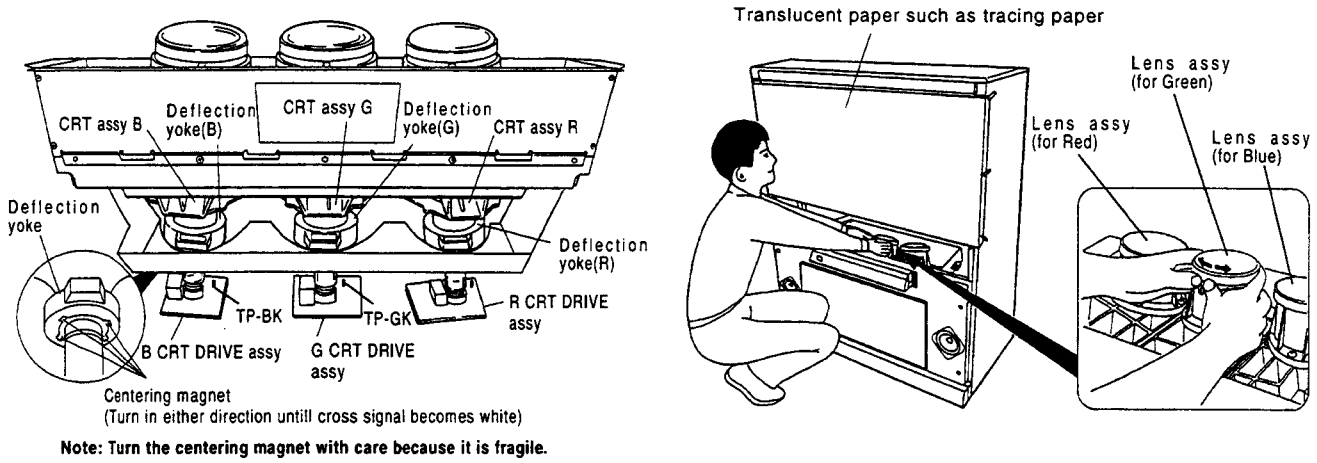


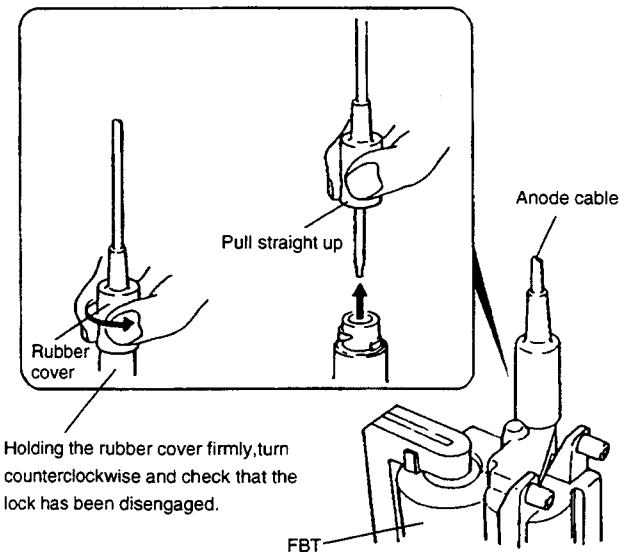
Fig.9-6 Adustment point(2)

7.3 ANODE VOLTAGE MEASURING METHOD

Disconnect the FBT anode cable as outlined in Fig. 7-5. Measure at the point where the cable enters the FBT.

Caution: Take extra precaution when measuring this high voltage. High voltages are also present in surrounding circuit boards (CRT DRIVE assembly, POWER SUPPLY assembly).

SERVICEMAN WARNING
Before removing the anode cable,turn off the power, unplug the AC plug and let the unit discharge for more than 1 minute.



Note:When reconnecting the cable,proceed in the reverse order.
After reconnecting,tug on the cable to check that it is secure.

Fig.9-7 Disconnecting the anode cable

9.4 CONVERGENCE ADJUSTMENT

9.4.1 Adjustment Method for Convergence

Perform the adjustment in ADJ. CONVERGE of FACTORY ADJ mode.(For how to enter the FACTORY ADJ mode,see section "FACTORY ADJ mode" on page 113.)

● Green line convergence adjustment

Adjust the green line convergence with VRs on the CONVERGENCE ASSY.

● Red or blue line convergence adjustment

Perform the following adjustment using the remote control unit.

- Operating procedure

Alphabetics shown in the lower-left portion of the screen indicate the type of convergence. Change the type by pressing the [ANT] (or [CH RETURN]) key on the remote control unit. Every time the [ANT] (or [CH RETURN]) key is pressed,the type changes in the order.

→ RH → RV → BH → BV → cyclically

The characters to the right of the type indicate the setting value,and can be changed with the VOL (⊞,⊟) keys on the remote control unit. It the lower-right portion of the screen,the adustment items are displayed. The items are assigned to the numeric keys from [0]: STATIC to [9] : SUB LIN, on the remote control unit.

● To output red,green and blue separately

- To output red ON/OFF: Press the [TV] key on the remote control unit.
- To output green ON/OFF: Press the [LD] key on the remote control unit.
- To output Blue ON/OFF: Press the [VIDEO1] key on the remote control unit.

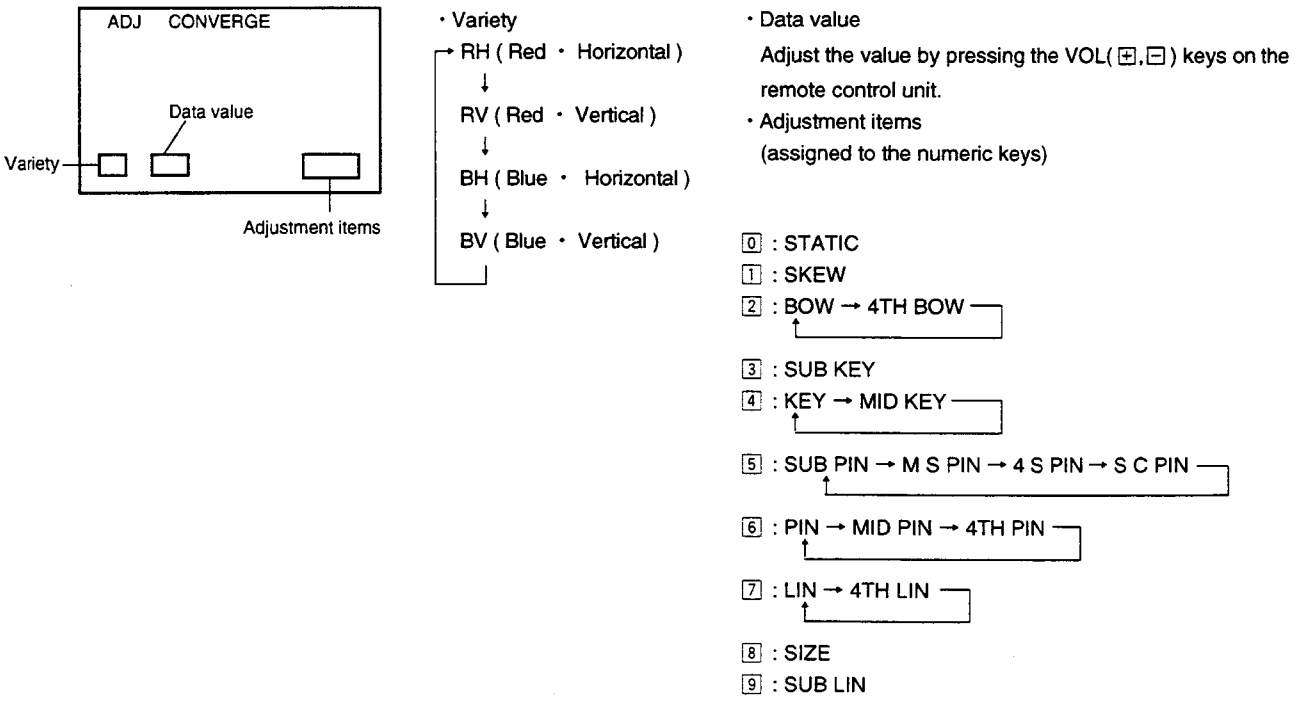


Fig.9-8 Adjustment method for convergence

Numeric keys	Adjustment items	Type						Numeric keys	Adjustment items	Type					
		GH	GV	RH	RV	BH	BV			GH	GV	RH	RV	BH	BV
0	STATIC			○	○	○	○	6	PIN ← ↓ MID PIN ↓ 4TH PIN →	VR	VR	○	○	○	○
1	SKEW		VR	○	○	○	○					○	○	○	○
2	BOW ← ↓ 4TH BOW →		VR	○	○	○	○					○	○	○	○
				○		○		7	LIN ← ↓ 4TH LIN →			○	○	○	○
3	SUB KEY			○	○	○	○					○		○	
4	KEY ← ↓ MID KEY →	VR	VR	○	○	○	○	8	SIZE			○	○	○	○
					○		○	9	SUB LIN			○	○	○	○
5	SUB PIN ← ↓ M S PIN ↓ 4 S PIN ↓ S C PIN →			○	○	○	○								
				○		○									
				○		○									
					○		○								

○ = yes,/ = No, VR = Adjust GH, GV with a semifixed VR.

9.4.2 Green Line Adjustment

- A green line is a reference line for the red and blue lines.
  Be sure to adjust precisely.
- Perform the green line adjustment with a single green color.
- For information on blocks which are referred to in some operation columns,see Fig.9-9 and 9-13.
- Adjust in ADJ. CONVERGE NORMAL mode, then in ADJ. CONVERGE WIDE mode.

Step No.	Adjustment item		Adjustment point	Adjustment Procedure
1	Center line adjustment	GV-SKEW	VR2301 (N) VR2310 (W)	Ajust so that the center horizontal line of the screen is not leaned.
2		GV-BOW	VR2302 (N) VR2311 (W)	Ajust so that the center horizontal line of the screen is straight.
3	Repeat steps 1 and 2 to obtain the optimum center horizontal lines.			
4	Distortion adjustment	GV-PIN	VR2304 (N) VR2313 (W)	Ajust so that the horizontal lines in the E block of the screen are straight.
5		GH-PIN	VR2305 (N) VR2315 (W)	Ajust so that the vertical lines in the B and C blocks on the screen are straight.
6	Lean adjustment	GV-KEY	VR2303 (N) VR2312 (W)	Ajust so that the horizontal lines in the E block of the screen are not leaned.
7		GH-KEY	VR2306 (N) VR2314 (W)	Ajust so that the vertical lines in the B and C blocks on the screen are not leaned.
8	Repeat steps 4 through 7 and then 1 through 7 to obtain the optimum lines.			

Note; (N) : At ADJ. CONVERGE NORMAL
(W) : At ADJ. CONVERGE WIDE

9.4.3 Red line Adjustment

- Adjust the red line convergence using a green line and red line.
- Adjust it by overlaying a red line on a green line using the VOL (⊞ , ⊟) keys on the remote control unit so that the line becomes yellow.
- For information on blocks which are referred to in some operation columns,see Fig.9-9 and 9-13.
- Adjust in ADJ. CONVERGE NORMAL mode, then in ADJ. CONVERGE WIDE mode.
- After making the adjustments for all items,perform fine adjustment referring to the whole screen.

● Red Adjustment In the Horizontal Direction

Step No.	Adjustment item		Adjustment Procedure
1	Center line adjustment	RH-SKEW	Ajust so that the center vertical line of the screen is not leaned.
2		RH-BOW	Adjust so that the center vertical line of screen is not distorted and is straight.
3		RH-4TH BOW	
4		RH-STATIC	Converge the center vertical line in the green vertical line.
5	Repeat steps 1 through 4 to obtain the oputimum center vertical line.		
6	Lean adjustment	RH-SUB KEY	Adjust so that the vertical lines in the B and C blocks of the screen.
7		RH-KEY	
8	Repeat steps 6 and 7 to obtain vertical lines that are most perfectly vertical in the B and C blocks of the screen.		
9	Distortion adjustment	RH-M S PIN	Adjust so that the vertical lines in the right and left sections of the screen are not distorted and are straight.
10		RH-SUB PIN	
11		RH-4 S PIN	
12		RH-MID PIN	
13		RH-PIN	
14		RH-4TH PIN	
15	Repeat steps 9 throught 14 to obtain straight vertical lines in the right and left sections of the screen.		
16	Repeat steps 6 throught 15 to obtain the optimum vertical lines in the right and left sections of the screen.		
17	Line intervals adjustment	RH-4TH LIN	Adjust the intervals of the vertical lines in the right and left sections of the screen and converge them in the green vertical lines.
18		RH-LIN	
19		RH-SIZE	
20		RH-SUB LIN	
21	Repeat steps 17 through 20 to obtain the optimum vertical lines in the right and left sections of the screen.		
22	Fine-adjust over the entire picture to obtain the optimum picture.		

● Red Adjustment In the Vertical Direction

Step No.	Adjustment item		Adjustment Procedure
1	Center line adjustment	RV-SKEW	Adjust so that the center horizontal line of the screen is not leaned.
2		RV-BOW	Adjust so that the center horizontal line of the screen is not distorted and is straight.
3		RV-STATIC	Converge the center horizontal line in the green horizontal line.
4	Repeat steps1 through 3 to obtain the optimum center horizontal line.		
5	Lean adjustment	RV-MID KEY	Adjust so that the horizontal lines in the D and E blocks of the screen are not leaned.
6		RV-SUB KEY	
7		RV-KEY	
8	Repeat steps 5 and 7 to obtain the horizontal lines that are most perfectly horizontal in the D and E blocks of the screen.		
9	Distortion adjustment	RV-SUB PIN	Adjust so that the horizontal lines in the upper and lower sections of the screen are not distorted and are straight.
10		RV-MID PIN	
11		RV-PIN	
12		RV-S C PIN	
13		RV-4TH PIN	
14	Repeat steps 9 throught 13 to obtain straight horizontal lines in the upper and lower sections of the screen.		
15	Repeat steps 5 throught 14 to obtain the optimum horizontal lines in the upper and lower sections of the screen.		
16	Line intervals adjustment	RV-LIN	Adjust the intervals of the horizontal lines in the D and E blocks of the screen and converge them in the green horizontal lines.
17		RV-SIZE	
18		RV-SUB LIN	
19	Repeat steps 16 through 18 to obtain the optimum horizontal lines in the upper and lower sections of the screen.		
20	Fine-adjust over the entire picture to obtain the optimum picture.		

9.4.4 Blue line Adjustment

- Adjust the blue line convergence using a green line and blue line.
- Adjust it by overlaying a blue line on a green line using the VOL (⊞ , ⊟) keys on the remote control unit so that the line becomes cyan.
- For information on blocks which are referred to in some operation columns,see Fig.9-9 and 9-13.
- Adjust in ADJ. CONVERGE NORMAL mode, then in ADJ. CONVERGE WIDE mode.
- After making the adjustments for all items,perform fine adjustment referring to the whole screen.

● Blue Adjustment In the Horizontal Direction

Step No.	Adjustment item		Adjustment Procedure
1	Center line adjustment	BH-SKEW	Ajust so that the center vertical line of the screen is not leaned.
2		BH-BOW	Adjust so that the center vertical line of screen is not distorted and is straight.
3		BH-4TH BOW	
4		BH-STATIC	Converge the center vertical line in the green vertical line.
5	Repeat steps 1 through 4 to obtain the oputimum center vertical line.		
6	Lean adjustment	BH-SUB KEY	Adjust so that the vertical lines in the B and C blocks of the screen are not leaned.
7		BH-KEY	
8	Repeat steps 6 and 7 to obtain vertical lines that are most perfectly vertical in the B and C blocks of the screen.		
9	Distortion adjustment	BH-M S PIN	Adjust so that the vertical lines in the right and left sections of the screen are not distorted and are straight.
10		BH-SUB PIN	
11		BH-4 S PIN	
12		BH-MID PIN	
13		BH-PIN	
14		BH-4TH PIN	
15	Repeat steps 9 throught 14 to obtain straight vertical lines in the right and left sections of the screen.		
16	Repeat steps 6 throught 15 to obtain the optimum vertical lines in the right and left sections of the screen.		
17	Line intervals adjustment	BH-4TH LIN	Adjust the intervals of the vertical lines in the right and left sections of the screen and converge them in the green vertical lines.
18		BH-LIN	
19		BH-SIZE	
20		BH-SUB LIN	
21	Repeat steps 17 through 20 to obtain the optimum vertical lines in the right and left sections of the screen.		
22	Fine-adjust over the entire picture to obtain the optimum picture.		

● Blue Adjustment In the Vertical Direction

Step No.	Adjustment item		Adjustment Procedure
1	Center line adjustment	BV-SKEW	Adjust so that the center horizontal line of the screen is not leaned.
2		BV-BOW	Adjust so that the center horizontal line of the screen is not distorted and is straight.
3		BV-STATIC	Converge the center horizontal line in the green horizontal line.
4	Repeat steps1 through 3 to obtain the optimum center horizontal line.		
5	Lean adjustment	BV-MID KEY	Adjust so that the horizontal lines in the D and E blocks of the screen are not leaned.
6		BV-SUB KEY	
7		BV-KEY	
8	Repeat steps 5 and 7 to obtain the horizontal lines that are most perfectly horizontal in the D and E blocks of the screen.		
9	Distortion adjustment	BV-SUB PIN	Adjust so that the horizontal lines in the upper and lower sections of the screen are not distorted and are straight.
10		BV-MID PIN	
11		BV-PIN	
12		BV-S C PIN	
13		BV-4TH PIN	
14	Repeat steps 9 throught 13 to obtain straight horizontal lines in the upper and lower sections of the screen.		
15	Repeat steps 5 throught 14 to obtain the optimum horizontal lines in the upper and lower sections of the screen.		
16	Line intervals adjustment	BV-LIN	Adjust the intervals of the horizontal lines in the D and E blocks of the screen and converge them in the green horizontal lines.
17		BV-SIZE	
18		BV-SUB LIN	
19	Repeat steps 16 through 18 to obtain the optimum horizontal lines in the upper and lower sections of the screen.		
20	Fine-adjust over the entire picture to obtain the optimum picture.		

9.4.5 Picture Movements in Horizontal Adjustments

The adjustments in the horizontal direction are performed by applying the convergence correction signals to the horizontal deflection and changing the amount of the correction. With these adjustments, the vertical lines will move.
This section describes the picture movements and the adjusting points when adjusting each item using a cross hatch signal input.
See Fig. 9-9 for reference, in which each of the sections to the right and left to the center vertical line of the screen are divided into three blocks to describe the picture movements.

● Center–line adjustment in the Horizontal Direction
See Table 9-1 for the picture movements and general information on this adjustment.
This adjustment consists of H-SKEW, H-BOW, H-4TH BOW and H-STATIC to correct the overall picture.
Adjust the center vertical line so that it is not distorted and is straight and perfectly vertical.
The center vertical line does not move when adjusting the other items. Use the center vertical line set through this adjustment as reference for the other adjustments. After adjusting the center line, adjust the screen sections to the right and left of the center line.

Note that there may be some deviation in the overall picture if this adjustment is performed alone. Finely adjust the picture with subsequent adjustments.

Caution
Be sure to adjust H-STATIC by changing the data value within the range (010 to -010) of the telop indication in CONVER ADJ mode of FACTORY ADJ mode. If this range is exceeded, the convergence assembly may be damaged. If the adjustment is not possible within the range of 010 to -010, set the data value to 0, turn the centering magnet of the deflection yoke and fine-adjust H-STATIC.

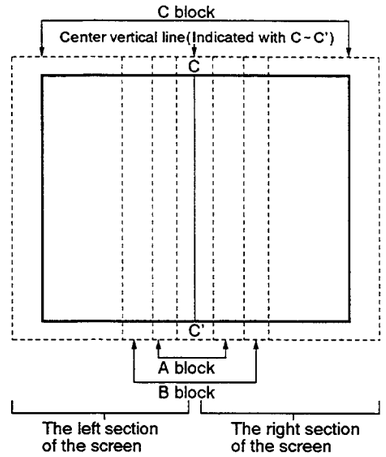
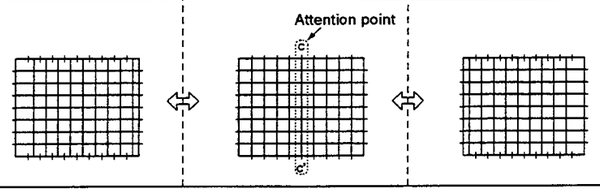
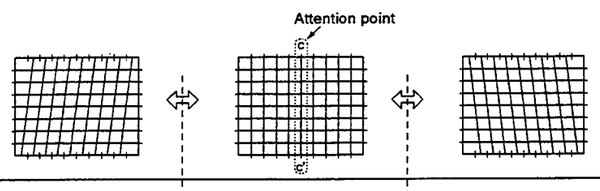
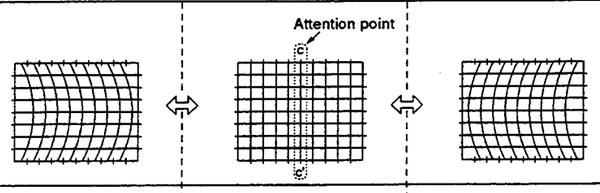
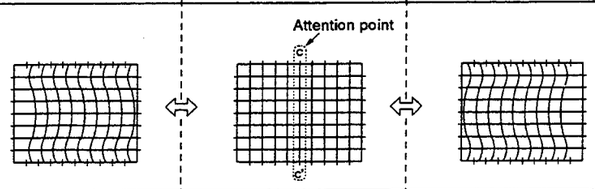


Fig. 9-9 Screen Divisions for Horizontal Adjustment

Table 9-1 Center-line Adjustment in the Horizontal Direction

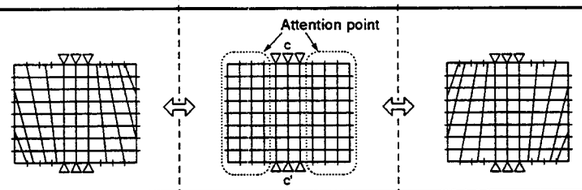
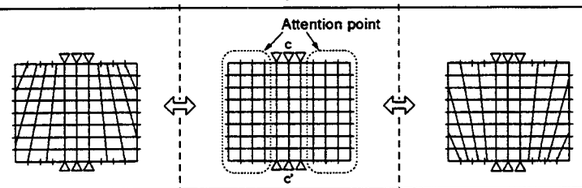
Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
H-STATIC *1				Center vertical line	Move the vertical line at the attention point on the screen shown in the figure to the left to converge it in the green line which has been set for reference. This provides the reference position of the center vertical line for the convergence adjustment.		The overall picture moves in parallel in the same manner as with the user-convergence adjustment.
H-SKEW				Center vertical line	Eliminate the lean at the attention point on the screen shown in the figure to the left.	Adjust H-SKEW, H-BOW, H-4TH BOW repeatedly until the center vertical line is straight and is perfectly vertical. Adjust H-SKEW and H-4TH BOW so that the A blocks are in the optimal condition. (The lean and waving distortion in the A blocks cannot be eliminated with the other adjustments.)	The lean of the overall picture is corrected. As shown in the figure to the left, the overall picture is leaned.
H-BOW				Center vertical line	Adjust so that the bowed line at the attention point on the screen shown in the figure to the left is straight.		The bowed lines over the overall screen are corrected. All the vertical lines are bowed as shown in the figure to the left.
H-4TH BOW				Center vertical line	Adjust so that the wavy line in the attention-point on the screen shown in the figure to the left is straight.		The waving (fourth-order) distortion over the overall screen is corrected. As shown in the figure to the left, the whole picture is distorted in waves.

*1: H-STATIC can be shifted for convenience while adjusting the other items. Be sure to adjust the other items in consideration of the shift in H-STATIC and then readjust H-STATIC. (Be sure to shift it within the telop indication range of 010 to -010.)

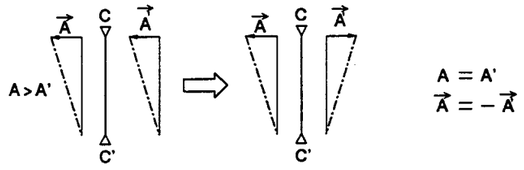
● Lean Adjustment in the Horizontal Direction

See Table 9-2 for the picture movements and general information on this adjustment.
The right and left sections of the screen are corrected with H-SUB KEY and H-KEY. Adjust the lean in the B and C blocks on the screen to eliminate.

Table 9-2 Lean adjustment in the Horizontal direction

Item	Deviating Picture	Corrected Picture Screen	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
H-SUB KEY				B and C blocks	Adjust to eliminate any lean at the attention-point blocks on the screen shown in the figure to the left. If the lean cannot be eliminated, set the screen to the status in which H-KEY has deviation as shown in Fig. 9-10, and adjust H-KEY.	Alternately adjust H-SUB KEY and H-KEY so that the lean in the B and C blocks is eliminated.	The lean in the B and C blocks on the screen is corrected. The right and left sections of the screen move in the same direction.
H-KEY				B and C blocks	Adjust to eliminate the lean in the attention-point blocks on the screen shown in the figure to the left.		The lean in the the B and C blocks on the screen is corrected. The right and left sections move symmetrically in relation to the center line.

Note:
▷——◁ : Line which does not move.



Note:
C ▷——◁ C' : Center vertical line
——— : Reference line
-·-·-·- : Leaned line

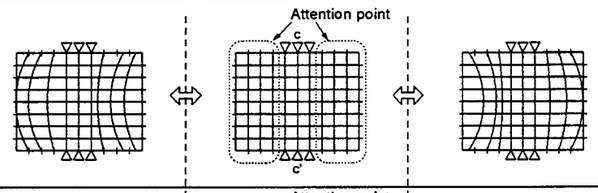
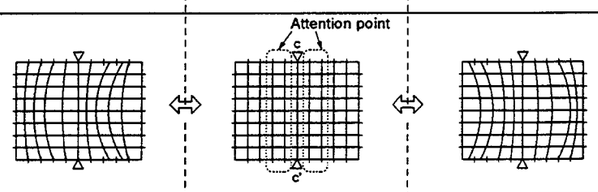
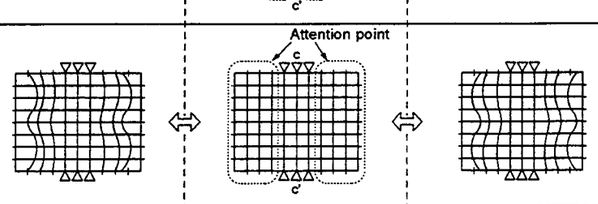
$\vec{A}$: Vector of the deviation in the left section of the screen
$\vec{A}$: Vector of the deviation in the right section of the screen
A : Scalar quantity of the deviation in the left section of the screen
A' : Scalar quantity of the deviation in the right section of the screen

Fig. 9-10 Example of H-SUB KEY

● Distortion Adjustment in the Horizontal Direction (1)

See Table 9-3 for the picture movements and general information on this adjustment.
In this adjustment, the distortion on the screen is corrected with H-M S PIN, H-SUB PIN and H-4 S PIN while moving the right and left sections in the same direction. Adjust them so that the distortion in the right and left sections is eliminated and the vertical lines in both sections are straight. If straight lines cannot be obtained, first set the picture to the status in which it is symmetrically distorted and then adjust H-MID PIN, H-PIN and H-4TH PIN.

Table 9-3 Distortion Adjustment in the Horizontal Direction (1)

Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
H-SUB PIN *1				B and C blocks (Especially C block)	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.	First adjust the A block with H-M S PIN and set the B block to a roughly-adjusted state. Then adjust the B and C blocks with H-SUB PIN. If the B and C blocks are distorted in waves, adjust H-4 S PIN. Repeat these adjustments until the vertical lines in both the left and right sections of the screen are straight. If straight lines cannot be obtained, move the right and left sections symmetrically as shown in Fig. 9-11 in the opposite directions to the same extent and adjust H-MID PIN, H-PIN and H-4TH PIN.	The bowed lines are corrected centering the C block on the screen. As shown in the figure to the left, the lines in the C block move more than those in the B block. The lines in the right and left sections move in the same direction.
H-M S PIN *1				A and B blocks (Especially B block)	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The bowed lines are corrected centering the B block on the screen. As shown in the figure to the left, the B block move more than the C block. The right and left sections move in the same direction.
H-4 S PIN				B and C blocks	Adjust so that any wavy lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The wavy lines (fourth-order) are corrected in the B and C blocks on the screen. The right and left sections move in the same direction.

*1 : H-SUB PIN and H-M S PIN work relative to each other. Be sure to adjust them alternately.

Note:
▷——◁ : Line which does not move.

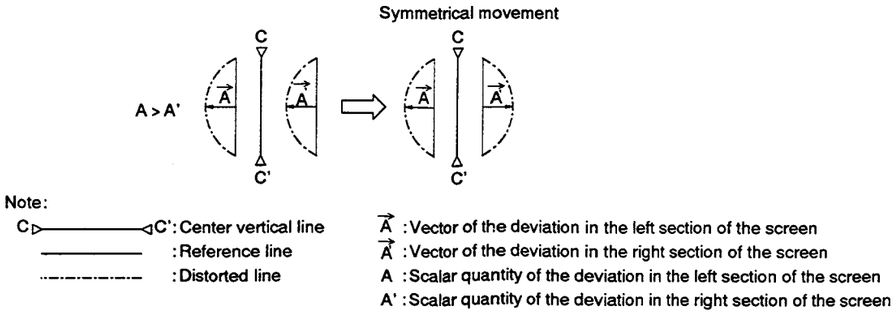
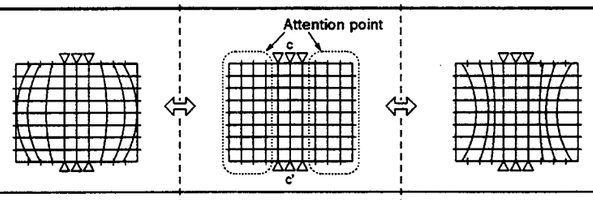
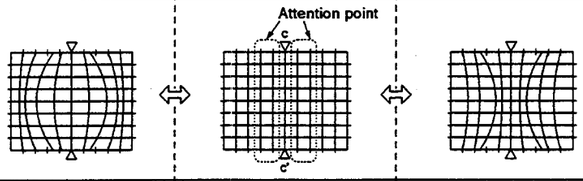
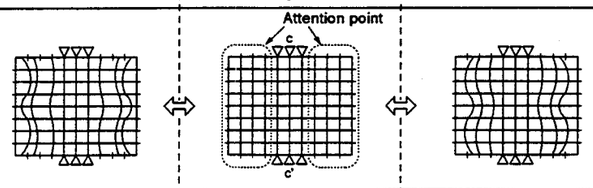


Fig. 9-11 Example of Distortion Adjustment in the Horizontal Direction (1)

● Distortion Adjustment in the Horizontal Direction (2)

See Table 9-4 for the picture movements and general information on this adjustment.
In this adjustment, the distortion on the screen is corrected with H-MID PIN, H-PIN and H-4TH PIN while moving the right and left sections of the screen symmetrically in relation to the center line. Adjust so that the distortion in the right and left sections is eliminated and the vertical lines in both sections are straight.

Table 9-4 Distortion Adjustment in the Horizontal Direction (2)

Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
H-PIN *1				B and C blocks (Especially C block)	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.	First adjust the A blocks with H-MID PIN and set the B blocks to a roughly-adjusted state. Then adjust the B and C blocks with H-PIN. If there is waving distortion, adjust H-4TH PIN. Repeat these adjustments until the vertical lines in both the left and right sections of the screen are straight.	The bowed lines are corrected centering the C block on the screen. As shown in the figure to the left, the C block move more than the B block. And the right and left sections move symmetrically in relation to the center line.
H-MID PIN *1				A and B blocks (Especially B block)	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The bowed lines are corrected centering the B block on the screen. As shown in the figure to the left, the B block move more than the C block. And the right and left sections move symmetrically in relation to the center line.
H-4TH PIN				B and C blocks	Adjust so that any wavy lines in the attention-point blocks on the screen shown in the figure to the left are straight.		The wavy lines (fourth-order) are corrected in the B and C blocks on the screen. As shown in the figure to the left, and the right and left sections move symmetrically in relation to the center line.

*1 : H-PIN and H-MID PIN work relative to each other. Be sure to adjust them alternately.

Note:
▷——◁ : Line which does not move.

● Line-Interval Adjustment in the Horizontal Direction

See Table 9-5 for the picture movements and general information on this adjustment.
In this adjustment, the intervals of the vertical lines are corrected with H-4TH LIN, H-LIN, H-SIZE and H-SUB LIN. Converge the vertical lines in the right and left sections of the screen in the green vertical lines which have been set for reference.
The differences between H-LIN, H-4TH LIN, H-SIZE and H-SUB LIN are shown in Table 9-6.

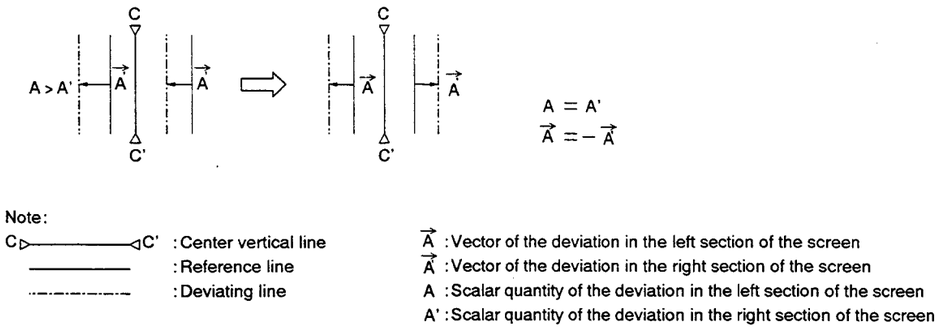
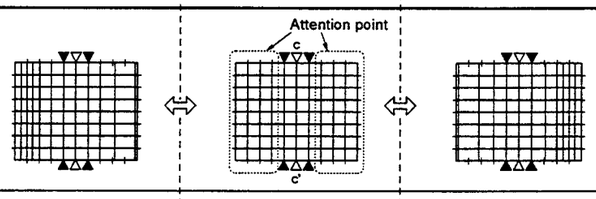
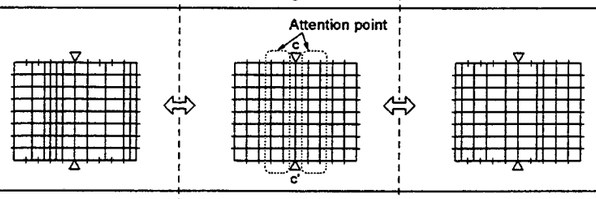
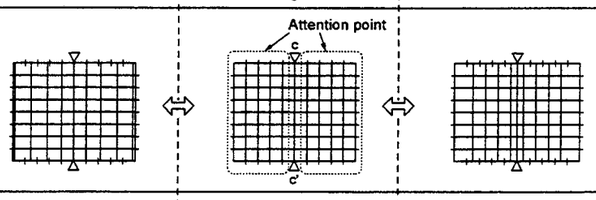
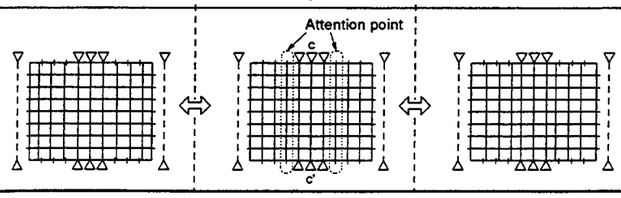


Fig. 9-12 Example of Line-Interval Adjustment in the Horizontal Direction

Table 9-6 Difference Between Adjustment Items

Item	Screen Example	Remarks
H-4TH LIN and H-LIN	R or B, G; G, R or B; Center	H-4 TH LIN and H-LIN should be adjusted when the right and left sections of the screen show deviation in the same direction.
H-SIZE and H-SUB LIN	R or B, G; R or B, G; Center	H-SIZE and H-SUB LIN should be adjusted when the right and left sections of the screen show deviation symmetrically in relation to the center line.

Table 9-5 Line-Interval Adjustment in the Horizontal Direction

Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
H-LIN *1				B and C blocks	Observe the movements with H-SIZE and H-SUB LIN and move the lines in the right and left sections in the opposite directions to the same extent. (See Fig. 9-12.)	First move the lines in the A blocks with H-4TH LIN and then those in the B and C blocks with H-LIN. Adjust them repeatedly until the optimum line intervals are obtained. *2	The line intervals are corrected centering the C block on the screen. As shown in the figure to the left, the lines in the right and left sections of the screen move centering the respective C block.
H-4 TH LIN *1				A and B blocks (Especially B block)	Observe the movements with H-SIZE and H-SUB LIN and move the lines in the right and left sections in the opposite directions to the same extent. (See Fig. 9-12.)		The line intervals are corrected centering the A and B blocks on the screen. As shown in the figure to the left, the lines in the right and left sections of the screen move centering the respective A and B block.
H-SIZE *2				A, B and C blocks	Converge the vertical lines in the green vertical lines which have been set for reference.	Adjust the vertical lines in the right and left sections of the screen with H-SIZE. If the lines cannot be converged in the B blocks, adjust H-SUB LIN.	The line intervals in the right and left sections (A, B and C blocks) of the screen are corrected. As shown in the figure to the left, the line intervals in the right and left sections of the screen change with the center line as the axis.
H-SUB LIN *2				B block	Converge the vertical lines in the attention-point blocks on the screen shown in the figure to the left in the green vertical lines which have been set for reference.		The line intervals in the B block on the screen are corrected. As shown in the figure to the left, the lines in the center of B block of the right and left sections move in the same manner as with H-SIZE.

*1: H-4TH LIN and H-LIN work relative to each other. Be sure to adjust them alternately.
*2: When convergence in the green lines is achieved with H-4TH LIN and H-LIN, further adjustments with H-SIZE and H-SUB LIN are not necessary.

Note:
: Line which does not move at all.
: Line which hardly moves.
: Line which does not move out of the screen.

9.4.6 Picture Movements in Vertical Adjustments

The adjustments in the vertical direction are performed by applying the convergence correction signals to the vertical deviation to change the amount of correction. With these adjustments, the horizontal lines will move.
This section describes the picture movements and the adjusting points when adjusting each item using a cross hatch input.
See Fig. 9-13 for reference, in which each of the sections above and below the center horizontal line of the screen are divided into two blocks to describe the picture movements.

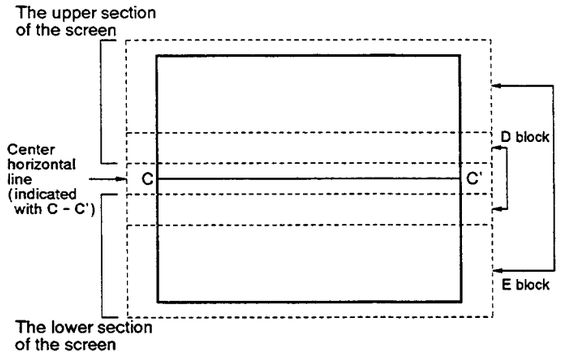


Fig. 9-13 Screen Divisions for Vertical Adjustments

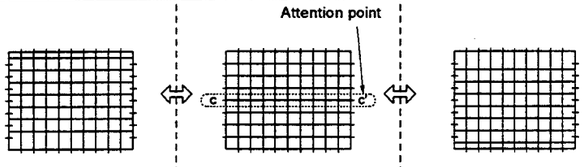
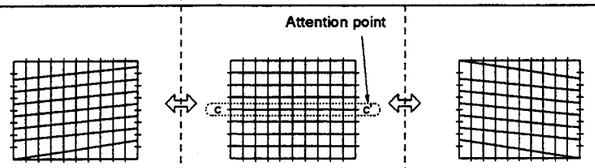
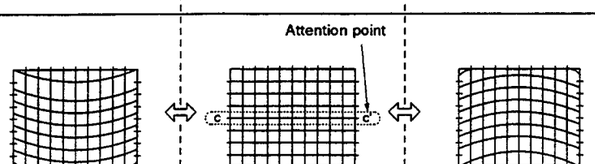
● Center-line Adjustment in the Vertical Direction

See Table 9-7 for the picture movements and general information on this adjustment.
This adjustment consists of V-SKEW, V-BOW and V-STATIC to correct the overall picture. Adjust the center horizontal line so that it is not distorted and is straight and perfectly horizontal. The center horizontal line does not move when adjusting the other items. Use the center horizontal line set through this adjustment as the reference for the other adjustments. After adjusting the center line, adjust the screen sections above and below the center line.
Note that there may be some deviation in the overall picture if this adjustment is performed alone. Finely adjust the picture with subsequent adjustments.

Caution

Be sure to adjust V-STATIC by changing the data value within the range (010 to -010) of the telop indication in CONVER ADJ mode of FACTORY ADJ mode.
If this range is exceeded, the convergence assembly may be damaged. If the adjustment is not possible within the range of 010 to -010, set the data value to 0, turn the centering magnet of the deflection yoke and fine-adjust V-STATIC.

Table 9-7 Center-line Adjustment in the Vertical Direction

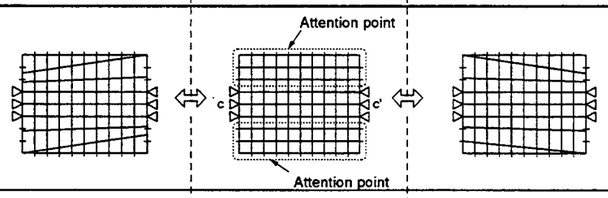
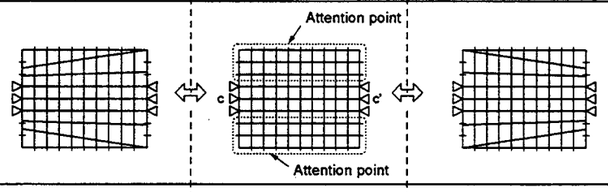
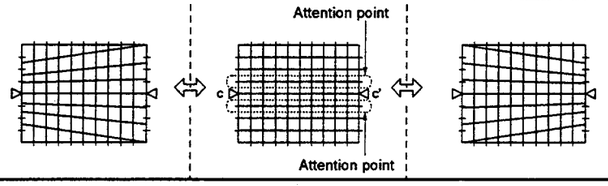
Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
V-STATIC *1				Center horizontal line	Move the horizontal line at the attention point on the screen shown in the figure to the left to converge it in the green line which has been set for the reference. This provides the reference position of the center horizontal line for the convergence adjustment.		The overall picture moves in parallel in the same manner as with the user-convergence adjustment.
V-SKEW				Center horizontal line	Eliminate the lean at the attention point on the screen shown in the figure to the left.	Adjust V-SKEW and V-BOW repeatedly until the center horizontal line is straight and is perfectly horizontal. Be sure to set to the range in which the D blocks can be adjusted with V-MID KEY. (For the D blocks, the distortion cannot be independently adjusted and the lean is eliminated only with V-MID KEY.)	The lean of the overall picture is corrected. As shown in the figure to the left, the overall picture is leaned.
V-BOW				Center horizontal line	Adjust so that the bowed line at the attention point on the screen shown in the figure to the left is straight.		The bowed lines over the screen are corrected. All the horizontal lines are bowed as shown in the figure to the left.

*1: V-STATIC can be shifted for convenience while adjusting the other items. Be sure to adjust the other items in consideration of the shift in V-STATIC and then readjust V-STATIC. (Be sure to shift it within the telop indication range of 010 to -010.)

● Lean Adjustment in the Vertical Direction

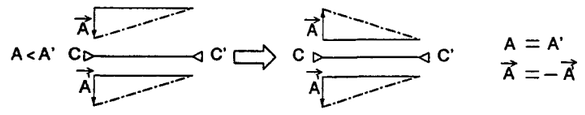
See Table 9-8 for the picture movements and general information on this adjustment.
In this adjustment, lean of the picture is corrected. Adjust V-SUB KEY, V-MID KEY and V-KEY to eliminating any lean in the upper and lower sections of the screen.

Table 9-8 Lean Adjustment in the Vertical Direction

Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
V-SUB KEY				E block	Adjust to eliminate the lean in the attention-point blocks on the screen shown in the figure to the left. If the lean cannot be eliminated, set the screen to the status in which V- KEY has deviation as shown in Fig. 9-14, and adjust V-KEY.	First adjust V- MID KEY so that the lean in the D block is eliminated. Then adjust V-SUB KEY and V-KEY so that the lean in the E block is eliminated. Repeat these adjustments until any lean in the upper and lower sections of the screen is eliminated.	The lean in the E block of the screen is corrected. The lines in the upper and lower sections of the screen move in the same direction.
V-KEY *1				E block	Adjust to eliminate the lean in the attention-point blocks on the screen shown in the figure to the left.		The lean in the E block of the screen is corrected. The upper and lower sections move symmetrically in relation to the center line.
V-MID KEY *1				D block	Adjust to eliminate any lean at the attention-point blocks on the screen shown in the figure to the left.		The lean in the upper and lower sections (D and E blocks) of the screen is corrected. The upper and lower sections move symmetrically in relation to the center line.

*1: V-MID KEY and V-KEY work relative to each other. Be sure to adjust them alternately.

Note:
: Line which does not move.



Note:
: Center horizontal line
: Reference line
: Leaned line
$\vec{A}$: Vector of the deviation in the upper section of the screen
$\vec{A}$: Vector of the deviation in the lower section of the screen
A : Scalar quantity of the deviation in the upper section of the screen
A' : Scalar quantity of the deviation in the lower section of the screen

Fig. 9-14 Example of Vertical Lean Adjustment

● Distortion Adjustment in the Vertical Direction

See Table 9-9 for the picture movements and general information on this adjustment.
In this adjustment, distortion on the screen is corrected. While adjusting V-SUB PIN, the upper and lower sections of the screen move in the same direction. While adjusting V-MID PIN, V-PIN, V-S C PIN and V-4TH PIN, the upper and lower sections move symmetrically in relation to the center line. Adjust them so that the distortion in the upper and lower sections of the screen is eliminated and the horizontal lines in both sections are straight.

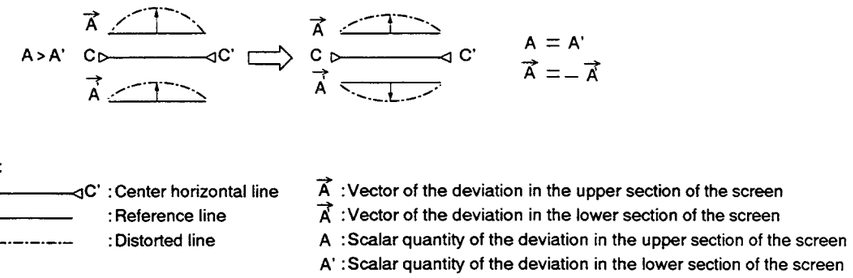
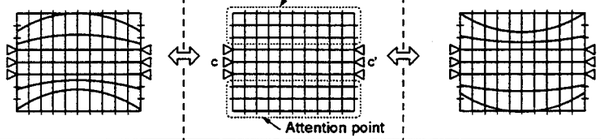
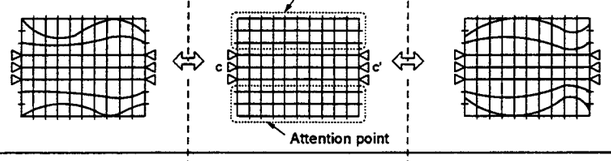
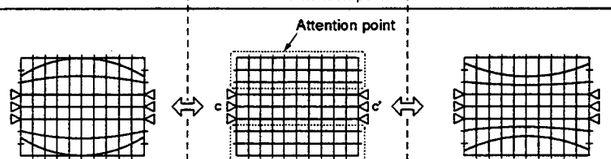
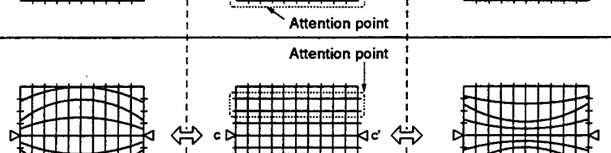
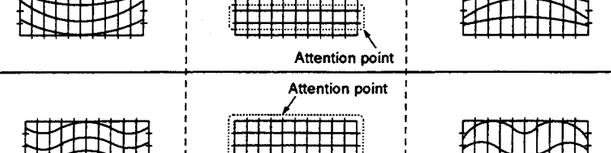


Fig. 9-15 Example of V-SUB PIN Adjustment

Table 9-9 Distortion Adjustment in the Vertical Direction

Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point	Remarks
V-SUB PIN				E block	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight. If straight lines cannot be obtained, move the upper and lower sections as shown in Fig. 9-15 in the opposite directions to the same extent from the center horizontal line. Adjust with V-PIN so that the lines are straight.	The bowed lines are corrected in the E block of the screen. As shown in the figure to the left, the upper and lower sections move in the opposite directions.
V-S C PIN				E block	Adjust so that any wavy lines in the attention-point blocks on the screen shown in the figure to the left are straight.	The wavy lines (third-order) are corrected in the E block on the screen. As shown in the figure to the left, the upper and lower sections move symmetrically in relation to the center line.
V-PIN				E block	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.	The bowed lines are corrected in the E block on the screen. As shown in the figure to the left, the upper and lower sections move symmetrically in relation to the center line.
V-MID PIN				D block and the center line side of E block. (Especially the center line side of the E block)	Adjust so that any bowed lines in the attention-point blocks on the screen shown in the figure to the left are straight.	The bowed lines are corrected on the center line side of E block on the screen. As shown in the figure to the left, the upper and lower sections move symmetrically in relation to the center line.
V-4TH PIN				D and E blocks	Adjust so that any wavy lines in the attention-point blocks on the screen shown in the figure to the left are straight.	The wavy lines (fourth-order) are corrected in the upper and lower sections (D and E blocks) of the screen. As shown in the figure to the left, the upper and lower sections move symmetrically in relation to the center line.

First adjust D block with V-MID PIN while setting the center-line side of E blocks to a roughly-adjusted state.
Then adjust E block with V-PIN.
If there is waving distortion, adjust V-4TH PIN and V-S C PIN.
Repeat these adjustments until all the horizontal lines in both upper and lower sections of the screen are straight.

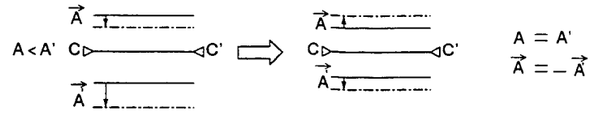
Note:
: Line which does not move at all.

● Line-Interval Adjustment in the Vertical Direction

See Table 9-10 for the picture movements and general information on this adjustment.
In this adjustment, the intervals of the horizontal lines in the upper and lower sections of the screen are corrected with V-LIN, V-SIZE and V-SUB LIN. Converge the horizontal lines in the upper and lower sections of the screen in the green horizontal lines which have been set for reference.
The differences between V-LIN, V-SIZE and V-SUB LIN are shown in Table 9-11.

Table 9-11 Difference Between Adjustment Items

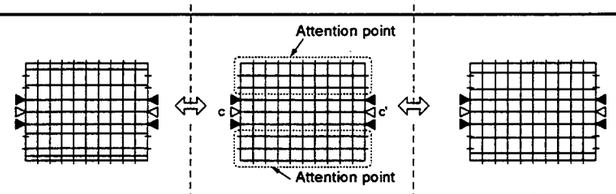
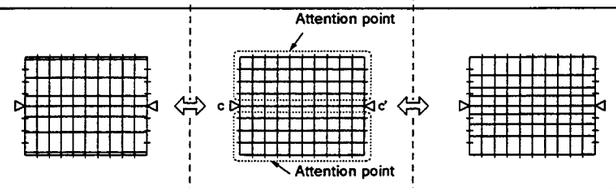
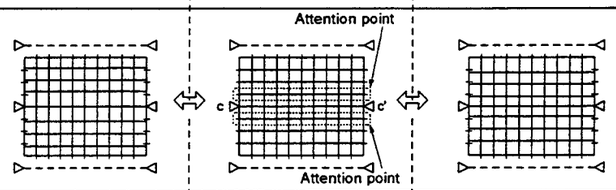
Item	Screen Example	Remarks
V-LIN	R or B G Center R or B G	V-LIN should be adjusted when the upper and lower sections of the screen show deviation in the same direction.
V-SIZE and V-SUB LIN	R or B G Center R or B G	V-SIZE and V-SUB LIN should be adjusted when the upper and lower sections of the screen show the upper and lower sections move symmetrically in relation to the center line.



Note:
: Center horizontal line
: Reference line
: Deviating line
$\vec{A}$: Vector of the deviation in the upper section of the screen
$\vec{A'}$: Vector of the deviation in the lower section of the screen
A : Scalar quantity of the deviation in the upper section of the screen
A' : Scalar quantity of the deviation in the lower section of the screen

Fig. 9-16 Example of V-LIN Adjustment

Table 9-10 Line-Interval Adjustment in the Vertical Direction

Item	Deviating Picture	Corrected Picture	Deviating Picture	Attention Point on the Screen During Adjustment	Adjustment Point		Remarks
V-LIN				E block	Observe the movements with V-SIZE and V-SUB LIN and move the lines in the upper and lower sections in the opposite directions to the same extent. (See Fig. 9-16.) When the convergence on the green lines is achieved, further adjustments with V-SIZE and V-SUB LIN are not necessary.		The line intervals are corrected centering the D and E blocks on the screen. As shown in the figure to the left, the lines in the upper and lower sections of the screen move centering the respective E block.
V-SIZE				D and E blocks	Converge the horizontal lines in the green horizontal lines which have been set for the reference.	Adjust the horizontal lines in the upper and lower sections of the screen with V-SIZE. If the lines in the D block cannot be converged, adjust V-SUB LIN.	The line intervals in the upper and lower sections (D and E blocks) of the screen are corrected. As shown in the figure to the left, the line intervals in the upper and lower sections of the screen change with the center line as the axis.
V-SUB LIN				D block	Converge the horizontal lines in the attention-point sections in the green horizontal lines which have been set for reference.		The line intervals in the D block on the screen are corrected. As shown in the figure to the left, the lines in the upper and lower sections move centering the respective D block in the same manner as with V-SIZE.

Note:
: Line which does not move at all.
: Line which hardly moves.
: Line which does not move out of screen.

9.5 TUNER SECTION

- No adjustment required when replacing the assembly.
- Perform the adjustment after the video and control section adjustments.
- Connection diagram is refered to Fig. 9-18.
- Adjustment points and test points are shown in Fig. 9-6.
- Perform the adjustment set to the TEST mode (Note 1).
- Perform the adjustment by using the channel 9 unless otherwise noted.
- Video and audio input signals are described in the below.

Note 1 ;

How to set the TEST mode.
- Short-circuit TP-TEST and GND in the TUNER-VIDEO assembly.
- Disconnect the AC power cord from the AC outlet, then connect it again.

How to release the TEST mode.
- Release the short-circuit TP-TEST and GND in the TUNER-VIDEO assembly.
- Disconnect the AC power cord from the AC outlet,then connect it again.

Ⓝ ; No signal
Video signal
V ① ; f_V = EIA color bar, 60 dB μ V
Audio signal (STEREO);
dbx noise reduction ON, PRE-EMPHASIS ON

S ① ; f_A = 300Hz,30% MOD,
Lch(or R ch) only, 54dB μ V
S ② ; f_A = 5KHz, 30% MOD
Lch(or R ch) only, 54dB μ V

Video system

Step No.	Adjustment Item	Input signal		Adjustment Point	Adjustment Procedure
		Video	Audio		
1	Video level adjustment	V①	Ⓝ	VR 4801 (T)	Adjust the output of the VIDEO REC terminal on the rear panel to 2Vp-p ± 0.15V (Not 75 Ω terminated.)

Audio system

Step No.	Adjustment Item	Input signal		Adjustment Point	Adjustment Procedure
		Video	Audio		
1	STEREO VCO	Ⓝ	Ⓝ	Remote control unit	● Press the numeric key [2] of the remote control unit for ST VCO adjustment mode. ● Measure the Rch output frequency of the OUTPUT REC terminal and adjust with the VOL ⊞ and ⊟ keys so that the frequency becomes closest to the 62.936kHz.
2	SAP VCO	Ⓝ	Ⓝ	Remote control unit	● Connect the Q4806 base to GND and input the 78.67 kHz ; 147 mVrms signal to TP-MPX(TP4902). ● Press the numeric key [3] of the remote control unit. ● Wait until "COMPLETE!" is displayed at part Ⓐ of the screen (see Fig. 9-17). ● If "TRY AGAIN!!" is displayed, adjust again using the following method. 1. Press the VOL ⊞ and ⊟ keys and adjust so that the value at part Ⓑ of the screen (see Fig. 9-17) becomes 21, 25, 29 or 2D. 2. Press the VOL ⊟ key slowly once at a time until the value at part Ⓑ of the screen changes from 21, 25, 29 or 2D to a different value. 3. Press the VOL ⊞ key slowly once at a time while counting it until the value at part Ⓑ of the screen changes from 21, 25, 29 or 2D to a different value. 4. Press the VOL ⊟ for half the number of times counted. 5. If the counted number is odd, subtract 1 from it and press the VOL ⊟ key for half of the resultant number.

Step No.	Adjustment Item	Input signal		Adjustment Point	Adjustment Procedure
		Video	Audio		
3	STEREO LPF adjustment	Ⓝ	Ⓝ	Remote control unit	● Connect the Q4806 base to GND and input the 9.4 kHz ; 600 mVrms signal to TP-MPX(TP4902). ● Press the numeric key [4] of the remote control unit. ● Wait until "COMPLETE!" is displayed at part Ⓐ of the screen (see Fig. 9-17). ● If "TRY AGAIN!!" is displayed, adjust again using the following method. 1. Press the VOL ⊞ and ⊟ keys and adjust so that the value at part Ⓑ of the screen (see Fig. 9-17) becomes 3X. 2. Press the VOL ⊟ key slowly once at a time until the value at part Ⓑ of the screen changes from 3X to a different value. 3. Press the VOL ⊞ key slowly once at a time while counting it until the value at part Ⓑ of the screen changes from 3X to a different value. 4. Press the VOL ⊟ for half the number of times counted. 5. If the counted number is odd, subtract 1 from it and press the VOL ⊟ key for half of the resultant number.
4	SAP LPF adjustment	Ⓝ	Ⓝ	Remote control unit	● Connect the Q4806 base to GND and input the 88 kHz ; 120 mVrms signal to TP-MPX(TP4902). ● Press the numeric key [5] of the remote control unit. ● Wait until "COMPLETE!" is displayed at part Ⓐ of the screen (see Fig. 9-17). ● If "TRY AGAIN!!" is displayed, adjust again using the following method. 1. Press the VOL ⊞ and ⊟ keys and adjust so that the value at part Ⓑ of the screen (see Fig. 9-17) becomes X1, X3, X5 or X7. 2. Press the VOL ⊟ key slowly once at a time until the value at part Ⓑ of the screen changes from X1, X3, X5 or X7 to a different value. 3. Press the VOL ⊞ key slowly once at a time while counting it until the value at part Ⓑ of the screen changes from X1, X3, X5 or X7 to a different value. 4. Press the VOL ⊟ for half the number of times counted. 5. If the counted number is odd, subtract 1 from it and press the VOL ⊟ key for half of the resultant number.
5 6	* Separation adjustment (WIDEBAND)	V①	S①	Remote control unit	● Press the numeric key [7] of the remote control unit. ● Adjust the output of the OUTPUT REC terminal on the rear panel to minimum level. (Adjust the R ch level becomes mimimun at the Lch input and the Lch level becomes minimum at the Rch input.)
7	Repeat step 5 and 6 to obtained best separation.				
8 9	* Separation adjustment (SPECTRAL)	V①	S②	Remote control unit	● Press the numeric key [6] of the remote control unit. ● Adjust the output of the OUTPUT REC terminal on the rear panel to minimum level. (Adjust the R ch level becomes mimimun at the Lch input and the Lch level becomes minimum at the Rch input.)
10	Repeat step 8 and 9 to obtained best separation.				
11	Repeat step 5 , 6 , 8 and 9 to obtained best separation.				

* : When performing the separation adjustment, be sure to perform WIDE BAND adjustment first.

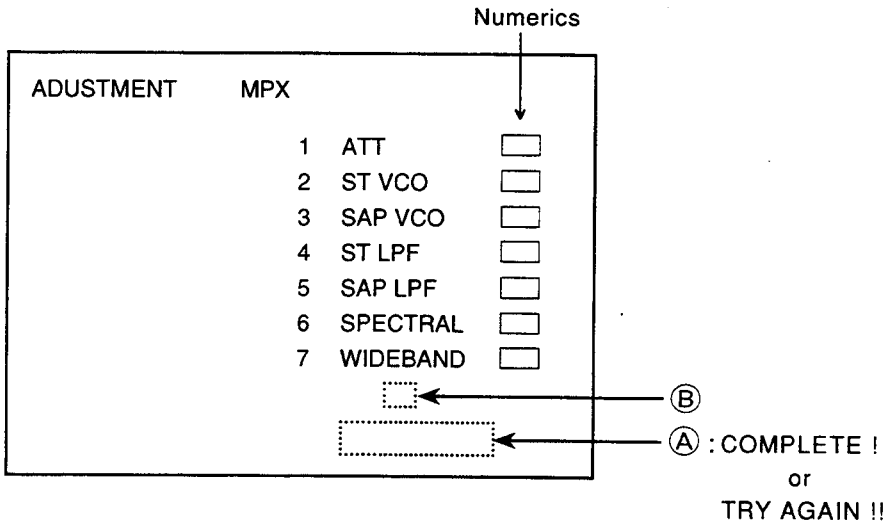


Fig. 9-17 Display of ADJUSTMENT MPX mode screen

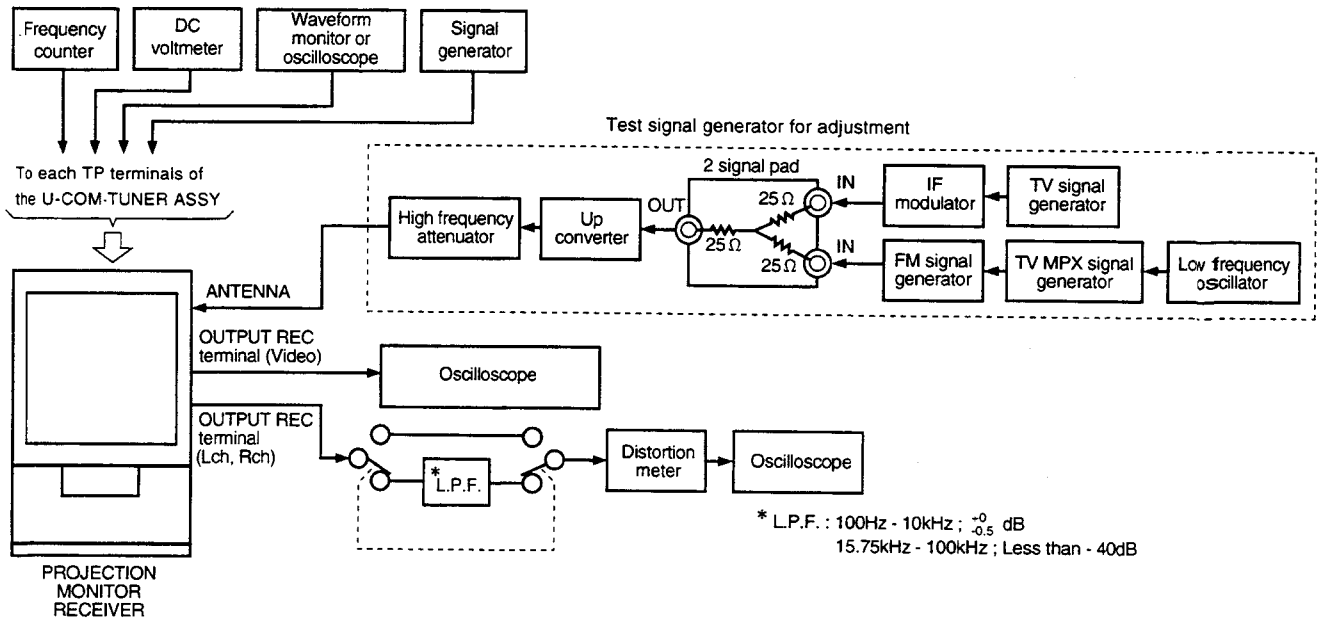


Fig. 9-18 Conection diagram when adjusting the tuner section

10. REPLACING THE CRT ASSY

Serviceman Warning
When replacing the CRT assy,turn off the power,unplug the AC plug and let the unit discharge for more than 1 minute.

The anode cables of the CRT assy R,G and B in PROJECTION MONITOR RECEIVER are connected in series as shown in Fig. 1.
When repracing the CRT assy,the anode cable have to be cut.

Note:
Since the anode cables for the CRT assy to service supplies are only available in half lengths,either cut longer lengths, or join older lengths of cable to ensure that the original cable length is used.

Table 1 Cable disconnecting methods

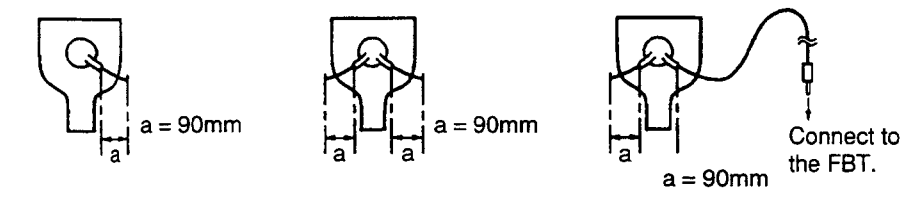
Cable	Replacement CRT assy		
	When CRT assy B is replaced	**When CRT assy G is replaced**	**When CRT assy R is replaced**
Cable ⓐ	—	—	Disconnect the anode cable from the FBT. (Refer to "7.3 ANODE VOLTAGE MEASURING METHOD")
Cable ⓑ	Leave it as is.	Cut a place 20mm from the exact center towards the CRT assy G.	Cut a place 20mm from the exact center towards the CRT assy R.
Cable ⓒ	Cut a place 20mm from the exact center towards the CRT assy B.	Cut a place 20mm from the exact center towards the CRT assy G.	Leave it as is.

Note: Do not cut other cables by mistake.

7.1 WHEN REPLACING THE CRT ASSY

Unplug the AC plug and let the unit discharge for more than 1 minute,then cut the anode cable according to Table 1.

Each CRT assy supplied as a spare part is as shown below.



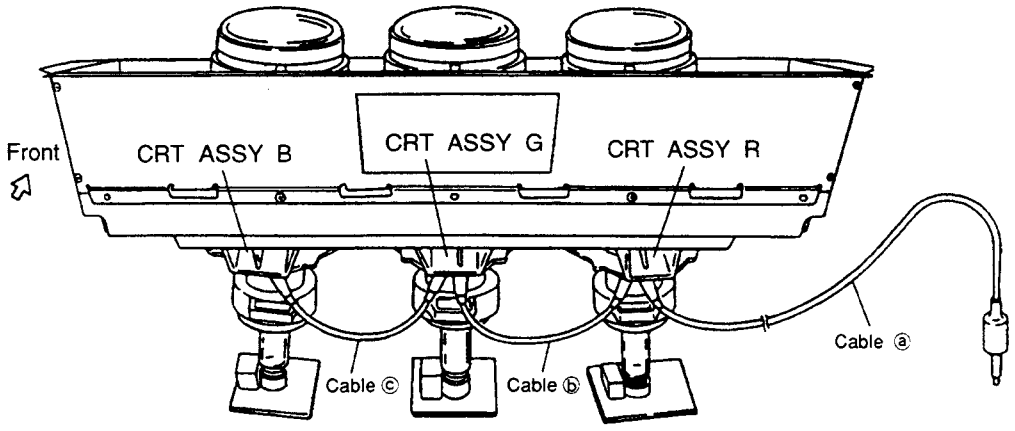
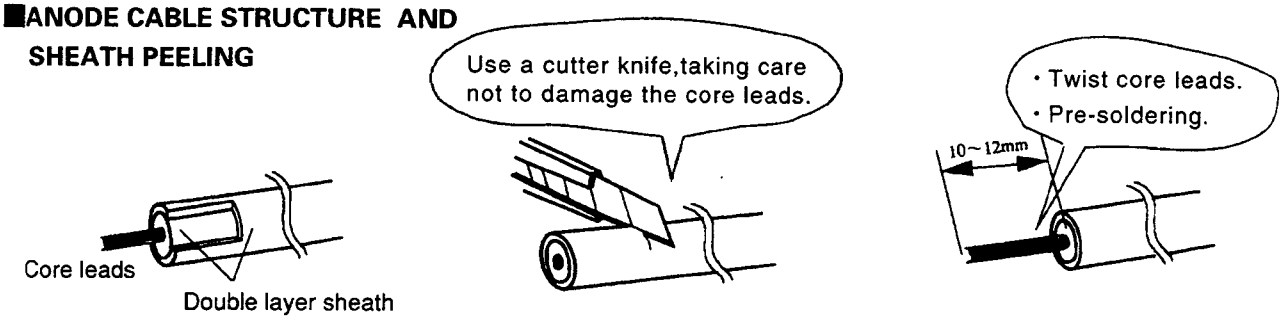


Fig. 1 Connection diagram of the CRT assemblies

■ANODE CABLE STRUCTURE AND SHEATH PEELING

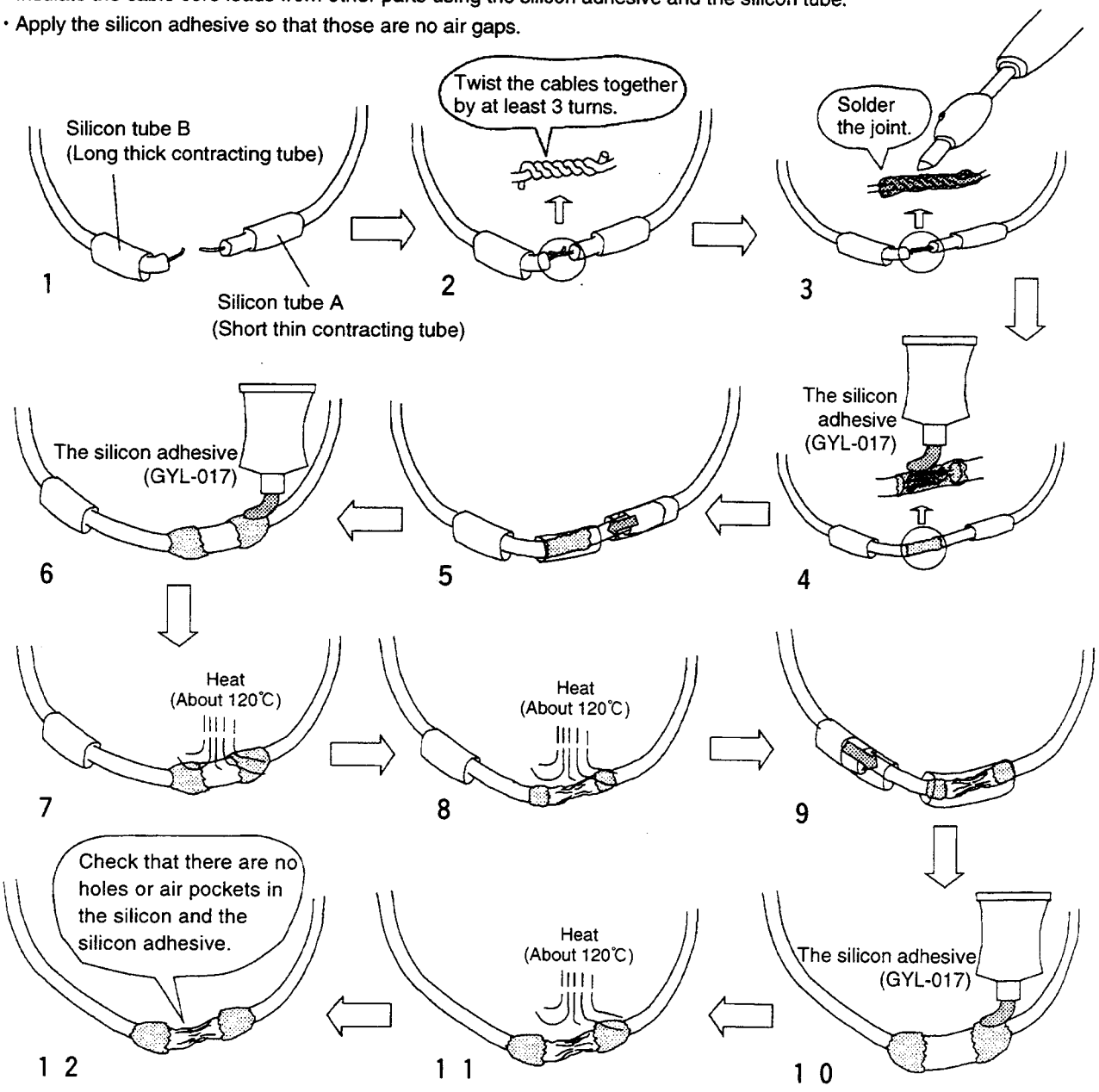


■ANODE CABLE JOINING PROCEDURE

(The silicon tube is packed with CRT ASSY. For the silicon adhesive,be sure to use silicon adhesive part number GYL-017.)

●CAUTION When connecting the anode cable, pay attention to the following.

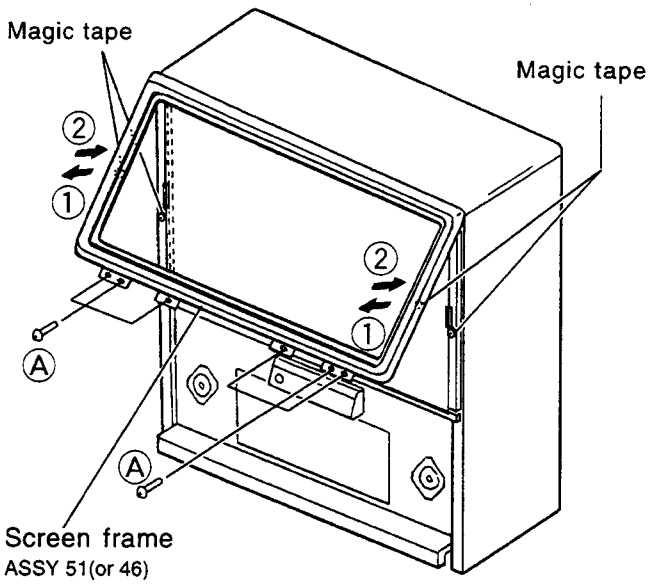
- Take care not damage the anode cable sheath.
- Insulate the cable core leads from other parts using the silicon adhesive and the silicon tube.
- Apply the silicon adhesive so that those are no air gaps.



11. DISASSEMBLY

●REMOVAL OF SCREEN FRAME ASSY 51(or 46)

1. Remove the six stopper screws Ⓐ of the screen frame ASSY 51(or46)
2. Pull the magic tape of the screen frame ASSY 51(or 46) in arror directions ① to bring it away from the cabinet.
3. Remove the screen frame ASSY 51(or 46) upwards.



●MOUNTING OF SCREEN FRAME ASSY 51(or 46)

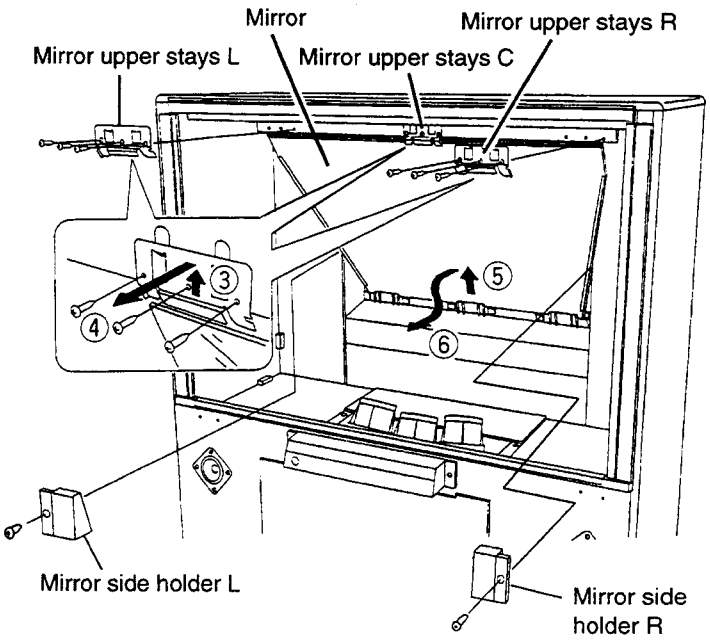
1. Hook the top part of the screen frame ASSY 51(or 46) and attach it.
2. Push the magic tape of the screen frame ASSY 51(or 46) in arrow directions ② to fix it to the cabinet.
3. Fix the six stopper screws Ⓐ of the screen frame ASSY 51(or46).

●PRECOUTION ON REMOVAL OF THE MIRROR CASE

The mirror is held by mirror upper stays L, R, and C in the cabinet assembly, and the mirror under stay attached to the mirror case.

The mirror may be dropped and damaged when removing only the mirror case. When removing the mirror for servicing, proceed as follows.

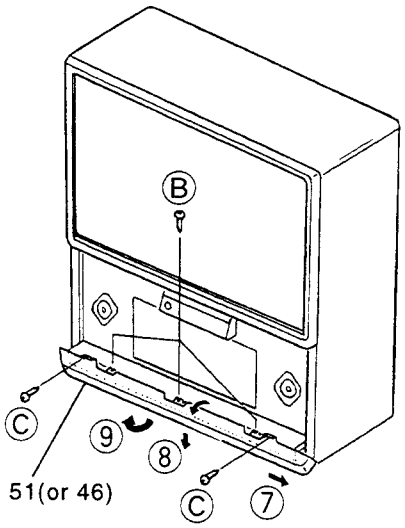
1. Remove the screen.
2. Remove the mirror upper stays L and R at upper left and right of the mirror.
3. Remove the mirror side holder L and R.
4. Support the mirror by the hand and remove the mirror upper stay C at upper center of the mirror.
   To remove the mirror upper stays L, R and C, remove the stopper screws, push and lift them along the bar of the cabinet assembly (in the direction of arrow ③), and pull them out toward you (in the direction of arrow ④).
5. Lift and remove the bottom of the mirror (in the direc tion of arrow ⑤), and remove the mirror in the direc tion of arrow ⑥.



●REMOVAL OF BOTTOM RAIL 51(or 46)

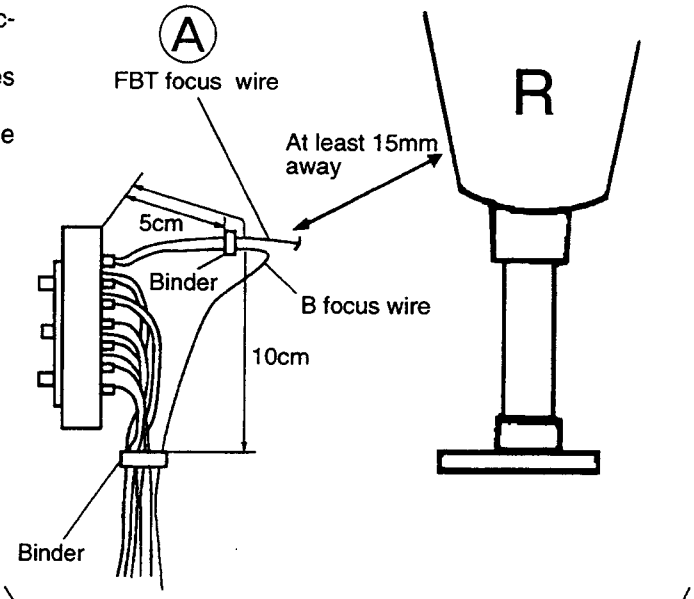
(SD-P5185-K and 83 fanily only)

1. Remove the three stopper screws Ⓑ and two stopper screws Ⓒ of the bottom rail 51(or 46).
2. Slide the bottom rail 51(or 46) in arrow direction ⑦.
3. Remove the bottom rail 51(or 46) while rotating its top part in arrow direction ⑧ and bring it down.
4. Remove the bottom rail 51(or 46) while rotating its bottom part in arrow direction ⑨ and bring it towards you.



12. WIRING DIAGRAM

Reconnect any disconnected lead wires of the Projection monitor receiver.
The important points for connection of the lead wires are shown below.
You may find that they were connected differently. Be sure reconnect the lead wires as they were.



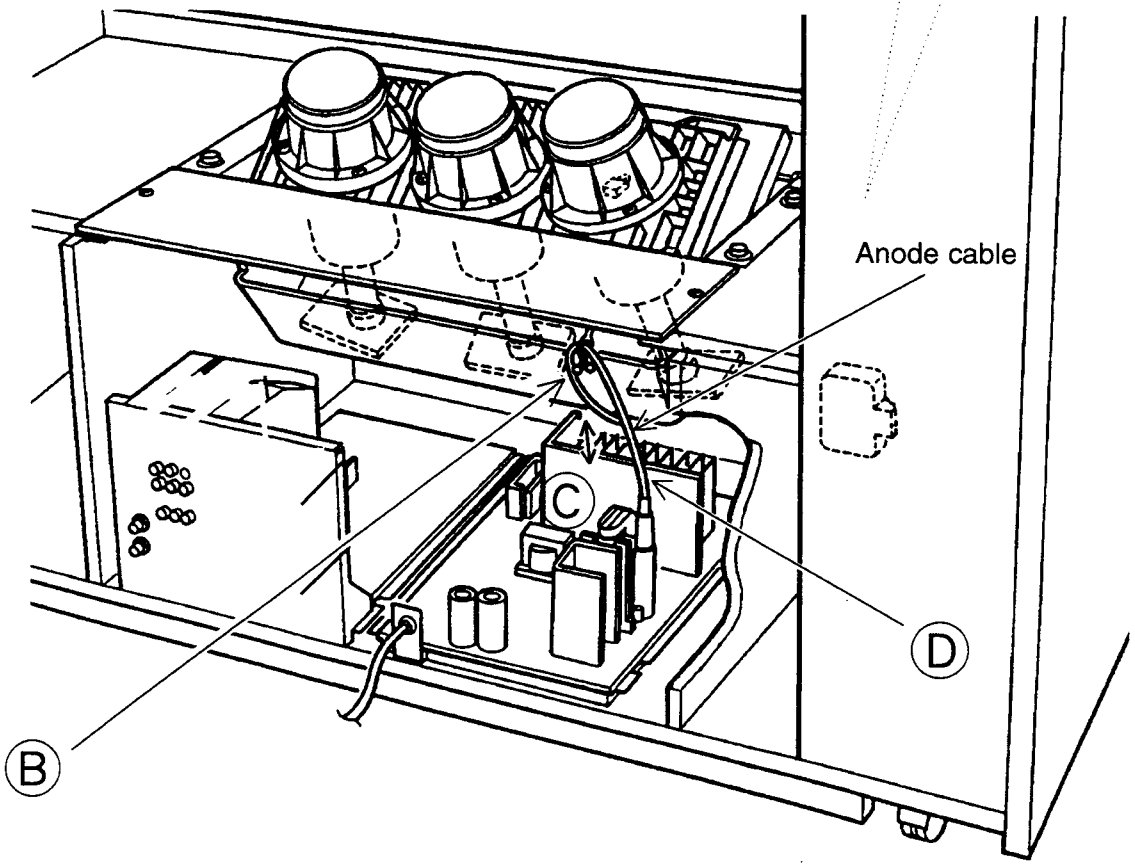
Note:

Ⓐ: FBT focus wire and other parts should be at least 15mm away from any other parts.

Ⓑ: Loop with a radius of 30mm or more.

Ⓒ: The anode cable and other parts should be at least 15mm away from any other parts.

Ⓓ: Loop with a radius of 50mm or more.



13. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ PD5300A (IC1731)

• CLOSED CAPTION SIGNAL DETECTOR AND CHARACTER DECODER

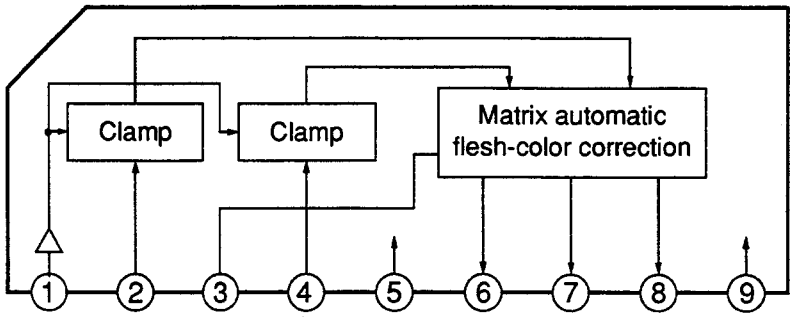
• Pin Function

Note) I : CMOS input O : CMOS output N : N ch open dolein output

No.	Name	I/O	Function	No.	Name	I/O	Function
1	HSYNC	I	Horizontal sync. signal input.	27	VCC	I	+5V power supply voltage
2	VSYNC	I	Vertical sync. signal input.	28	OSC2	O	Input/output pins of the clock generator circuit for OSD. Connect the 12MHz ceramic resonator.
3	R IN	I	R input	29	OSC1	I	
4	G IN	I	G input	30	RESET	I	Reset input. Input "L" for reset.
5	B IN	I	B input	31	NOT USED	I	+5V pull-up
6	BLK IN	I	Blanking input	32			
7	NOT USED	I	5V pull-up	33			
8				34			
9				35			
10				36			
11				37			
12				38			
13				39			
14				40			
15	CC ENB	I	Serial data enable input	41			
16	SIN	I	Serial data input	42			
17	SCLK	I	Serial clock input	43			
18	NOT USED	I	GND pull-down	44			
19	VHOLD	–	For data slicer (VHOLD-VSS 0.1 μF)	45			
20	VIN	I	For data slicer (VIN-VOUT 0.1 μF)	46			
21	VOUT	O		47			
22	CVIN	I	Video input for data slicer	48			
23	CNVSS	I	GND	49	BLK OUT	O	Blanking output
24	XIN	I	Input/output pins of the main clock genaration circuit. Connect the 8MHz ceramic resonator.	50	B OUT	O	B output
25	XOUT	O		51	G OUT	O	G output
26	VSS	I	GND	52	R OUT	O	R output

■ TA8647S (IC603)
VIDEO SIGNAL PROCESSOR

●Block Diagram



●Pin Fuction

No.	NAME	FUNCTION
1	FBP IN	Inputs fly-back pulse. DC-clamps input signals during this pulse period.
2	B – Y IN	Inputs B–Y signals
3	ON/OFF	Switch for automatic flesh-color correction. The automatic flesh-color correction is turned ON when a voltage to this pin is lower than 1.4V.
4	R – Y IN	Inputs R–Y signals
6	B –Y	Inputs B–Y signals
7	R – Y	Inputs R–Y signals
8	G – Y	Inputs G–Y signals

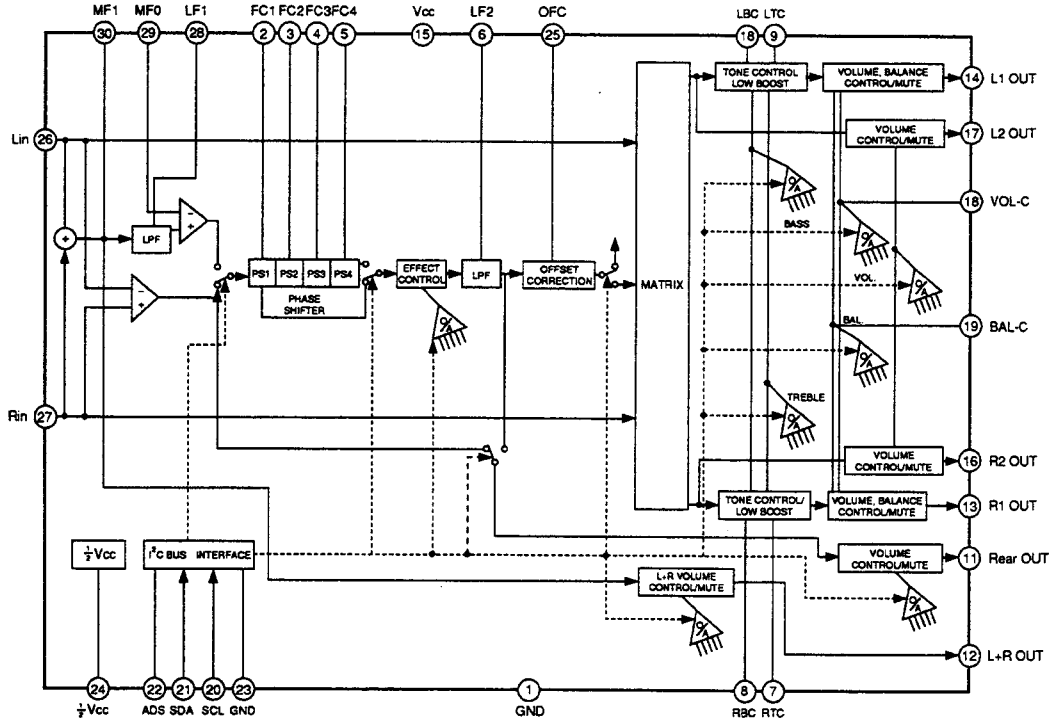
Maximum rating (Ta = 25°C)

Item	Symbol	Rating	Unit
Power supply voltage	Vcc	12	V
Input pin signal voltage	ein	5	V p-p
Dissipation power	PD [NOTE]	960	mW
Operating temperature	Topr	– 20 to 70	°C
Storage temperature	Tstg	– 55 to 150	°C

[NOTE] : Reduce 7.6 mW each time temperature increases by 1°C when this IC is used at more than 25°C.

■ μPC1853CT-01 (IC1402)
SOUND PROCESSOR

●Block Diagram



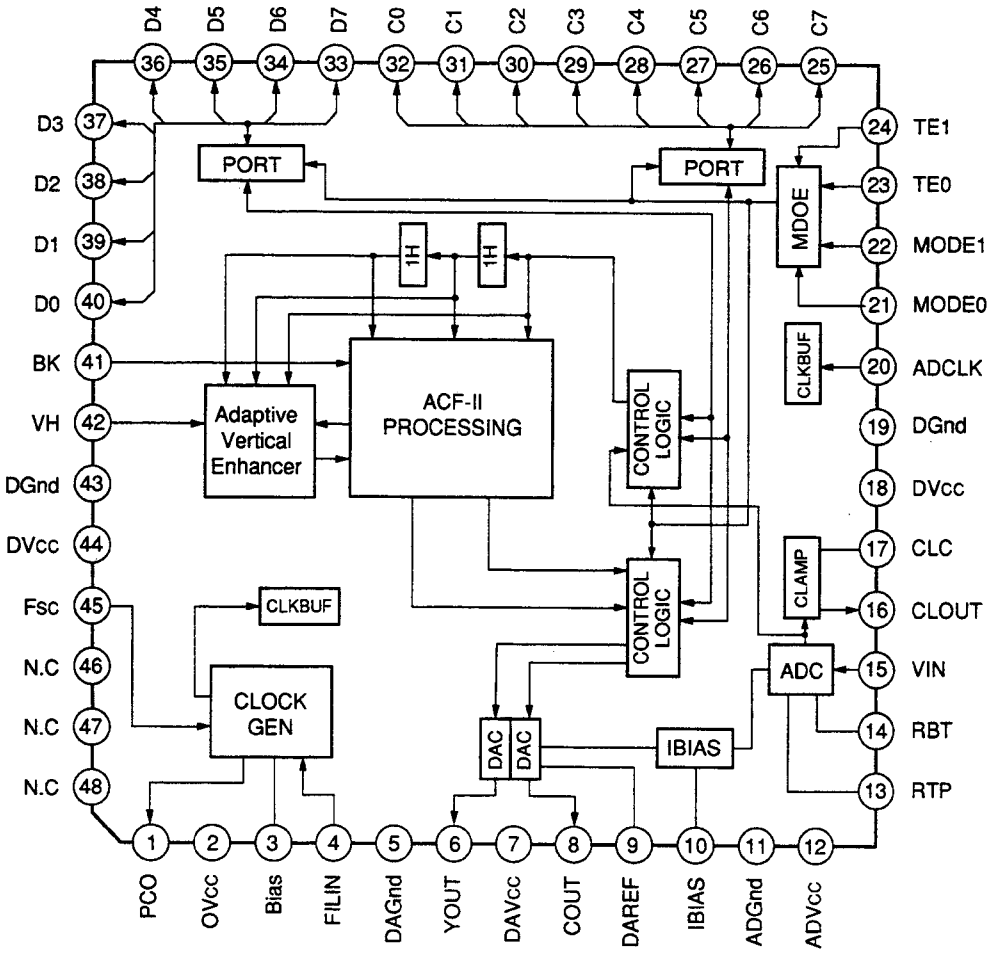
●Pin Fuction

No.	NAME	FUNCTION
1	GND	GND for analog signal processing
2	FC1	Connected to the capacitor determining the phase shifter time constant.
3	FC2	
4	FC3	
5	FC4	
6	LF2	Low pass filter
7	RTC	Connected to the capacitor determining the frequency characteristic of R channel treble boost/cut.
8	RBC	Connected to the capacitor determining the frequency characteristic of R channel bass boost/cut.
9	LTC	Connected to the capacitor determining the frequency characteristic of L channel treble boost/cut.
10	LBC	Connected to the capacitor determining the frequency characteristic of L channel bass boost/cut.
11	Rear OUT	Outputs L – R signal
12	L+R OUT	Outputs L + R signal
13	R1 OUT	Outputs R channel signal (main output)
14	L1 OUT	Outputs L channel signal (main output)
15	Vcc	+12V power supply

No.	NAME	FUNCTION
16	R2 OUT	Outputs R channel signal For audio output when an external audio processor, etc. is used.
17	L2 OUT	Outputs L channel signal For audio output when an external audio processor, etc. is used.
18	VOL – C	Capacitor for absorbing the shock noise of the volume control D/A converter.
19	BAL – C	Capacitor for absorbing the shock noise of the balance control D/A converter.
20	SCL	Serial clock line pin (I²C bus clock input)
21	SDA	Serial data line pin (I²C bus clock input)
22	ADS	Slave address switching pin
23	DGND	GND for I²C bus signal
24	1/2 Vcc	Power supply voltage middle point filter pin
25	OFC	Pin for absorbing the offset of the phase sifter
26	Lin	Inputs L channel signal
27	Rin	Inputs R channel signal
28	LF1	Low pass filter
29	MF0	Output pin of the high pass filter when surround function is in effect (simulated mode)
30	MF1	Output pin of the high pass filter when surround function is in effect (simulated mode)

■ MC141622FU (IC3201)
DIGITAL COMB FILTER

●Block Diagram



●Pin Fuction

No.	NAME	FUNCTION
1	PCO	Output pin of the phase shifter
2	OVcc	VCO power supply
3	Bias	VCO reference pin
4	FILIN	Inputs voltage for controlling VCO
5	DA Gnd	GND for DA converter
6	COUT	Outputs luminance signals
7	DA Vcc	Power supply for DA converter
8	COUT	Outputs color signal
9	DAREF	DA converter reference pin : Usually connected to DAGnd via a 0.1 µF monolithic ceramic capacitor.
10	IBIAS	Bias circuit current control pin for AD/DA converter : Usually connected to DAGnd via an external resistor.

No.	NAME	FUNCTION
11	AD Gnd	GND for AD converter
12	AD Vcc	Power supply for AD converter
13	RPT	Top reference voltage pin for AD converter : Internally supplies the top reference voltage.
14	RBT	Bottom reference voltage pin for AD converter : Internally supplies the bottom reference voltage.
15	VIN	AD converter input pin
16	CLOUT	Clamp voltage output pin : Clamps input signals by inputting video signals by AC coupling with connected to VIN.
17	CLC	Determines a time constant during clamp
18	D Vcc	Power supply for digital
19	D Gnd	GND for digital

No.	NAME	FUNCTION
20	ADCLK	AD converter clock input : Effective only in some digital input comb filter modes and test modes. Input level is CMOS level.
21	MODE 0	Mode input : Set to ground level in the normal mode (Fsc)
22	MODE 1	Mode input : Set to ground level in the normal mode (Fsc)
23	TE 0	Test mode input : Usually set to ground level
24	TE 1	Test mode input : Usually set to ground level
25	C7	Digital interface 1 input/output : Usually set to the power supply level.
26	C6	Digital interface 1 input/output : Usually set to the ground level.
27	C5	Digital interface 1 input/output : Usually set to the ground level.
28	C4	Digital interface 1 input/output : Usually set to the ground level.
29	C3	Digital interface 1 input/output : Usually set to the power supply level.
30	C2	Digital interface 1 input/output : Usually set to the ground level.
31	C1	Digital interface 1 input/output : Usually set to the ground level.
32	C0	Digital interface 1 input/output : Usually set to the ground level.
33	D7	Digital interface 2 input/output : Usually set to the power supply level.

No.	NAME	FUNCTION
34	D6	Digital interface 2 input/output:Usually set to the ground level.
35	D5	Digital interface 2 input/output:Usually set to the ground level.
36	D4	Digital interface 2 input/output:Usually set to the ground level.
37	D3	Digital interface 2 input/output:Usually set to the ground level.
38	D2	Digital interface 2 input/output:Usually set to the ground level.
39	D1	Digital interface 2 input/output:Usually set to the ground level.
40	D0	Digital interface 2 input/output:Usually set to the ground level.
41	BK	Supports a black-and-white broadcasting:Usually set to the ground level.
42	VH	Vertical contouring correction switch : Usually set to the ground level.
43	D Gnd	GND for digital
44	D Vcc	Power supply for digital
45	Fsc	Color subcarrier input : Inputs a 3.58 MHz color subcarrier frequency by AC coupling with an external capacitor (in normal (Fsc) mode).
46	N.C	Not used. Usually set to the ground level.
47	N.C	Not used. Usually set to the ground level.
48	N.C	Not used. Usually set to the ground level.

■ PD5301B (IC903)
SYSTEM CONTROL MICROCOMPUTER

●Pin Fuction

[Note] I : CMOS input N : Nch open-drain output O : CMOS output

No.	NAME	I/O	FUNCTION	ACT.
1	OSC 1	I	Display clock input/output.	–
2	OSC 2	O		
3	KEY	I	Main unit key scan signal input. Decodes PD5136 format signals.	L
4	N.C.	I	Not used.	–
5	REMOTE	I	Remote control signal input. Decodes SR format signals.	L
6	DPO	I	DPO analog voltage input.	–
7	COLOR	N	Color level control PWM output.	H
8	TINT	N	Tint level control PWM output.	H
9	CONTR	N	Contrast level control PWM output.	H
10	BRIGHT	N	Brightness level control PWM output.	H
11	SHARP	N	Sharpness level control PWM output.	H

No.	NAME	I/O	FUNCTION	ACT.
12	INT/EXT	N	Speaker internal/external switching. (H: Internal, L: External)	–
13	SMT ACK	I	Smart (learning remote control function only) microcomputer busy signal input.	H
14	SMT RST	N	Smart (learning remote control function only) microcomputer reset signal input.	L
15	H SYNC	I	Horizontal sync count input for the tuner reception. Judged that a broadcasting station is present when the number of H-SYNC during 1 mS is 12 to 18 for eight mS continuously. Judged that a broadcasting station is not present when other conditions continue for six mS continuously.	–
16	AC CLK	I	AC clock detection input. Used for detecting the AC power supply off. (Reset when AC is absent for 100 mS.)	–

No.	NAME	I/O	FUNCTION		ACT.
17	SR O/X	I	SR pin detection input.		H
18	BACK UP	O	Back-up to the smart (learning remote control function only) microcomputer.		H
19	SMT ENB	N	Enables the smart (learning remote control function only) microcomputer.		L
20	SCHK	I	I²C serial transfer clock input.		–
21	SCLK	N	I²C serial transfer clock.	Audio multiple IC Used for E²RPROM.	–
22	SDATA	I/N	I²C serial data input/ output.		
23	1M O/X	N	1M/40K (remote control input decision). L only when a 1 MHz signal is received.		–
24	DATA IN	I	Serial data input.	Used for communicating with a microcomputer (PD5320A).	–
25	SM CLK	N	Serial clock.		
26	DATA OUT	N	Serial data output.		
27	CNVss		Connected to VSS.		–
28	VM MUTE	O	Signal for muting a velocity modulation. Same timing as BLK OUT.		–
29	$\overline{\text{RESET}}$	I	System reset. Reset when L is input for more than 0.95 µS (in case OSC=4.19 MHz).		L
30	Xin	I	Input/output pin of the main clock generation circuit. Connected to a 8.0 MHz ceramic oscillator.		–
31	Xout	O			–
32	Vss		Applies 0V to VSS.		–
33	CONV B-MUT	O	R, G, B muting output.		H
34	CONV G-MUT	O			H
35	CONV R-MUT	O			H
36	TV AMUTE	O	Mutes the tuner sound.		H
37	CLK	O	Serial clock. (PLL (tuner), CCD, converter, port expander 1/2)		–
38	OPT 2	I	Model selection (selects the microcomputer functions).		–
39	OPT 1	I			
40	CENT.O/X	I	Center channel pin detection input.		H

	83 family	85 family	PRO family	(83)
OPT1	L	L	H	H
OPT2	L	H	L	H

No.	NAME	I/O	FUNCTION	ACT.
41	V O/X	I	Video signal present/absent decision input. Present: H, Absent: L.	H
42	RELAY	O	Power supply relay control signal output. ON: L, OFF: H	L
43	EXP 1 ENB	O	Enables the port expander M66320. REC out muting, input select, ACL switching, etc.	H
44	TV ENB	O	PLL IC (TSA5520) data enable	H
45	CNV ENB	O	Converter IC (PM0002A) data enable.	L
46	DATA	O	Serial data output. (PLL (tuner), CCD, converter, port expander 1/2)	H
47	C.C RST	O	CCD microcomputer hard reset output.	–
48	C.C ENB	O	CCD microcomputer data enable.	L
49	V MUTE	O	Video mute output.	–
50	AFT	I	Front end AFT signal input.	H
51	EXP 2 ENB	O	Port expander 2 enable.	H
52	S RST	O	I²C serial line microcomputer block external connection switch. H: External connection.	H
53	A MUTE	O	Audio mute output.	–
54	TV_VMUTE	O	TV video mute output.	L
55	TEST	I	Tuner test mode detection input.	L
56	LOCK	I	PLL lock detection input.	L
57	BLK_OUT	O	OSD video output.	H
58	TEST_CRS	O		H
59	OSD B	O		H
60	OSD G	O		H
61	OSD R	O		H
62	VSYNC	I	OSD sync signal input	L
63	HSYNC	I		L
64	VDD	I		–

■ PD5320A (IC3402)
MICROCOMPUTER FOR REMOTE CONTROL

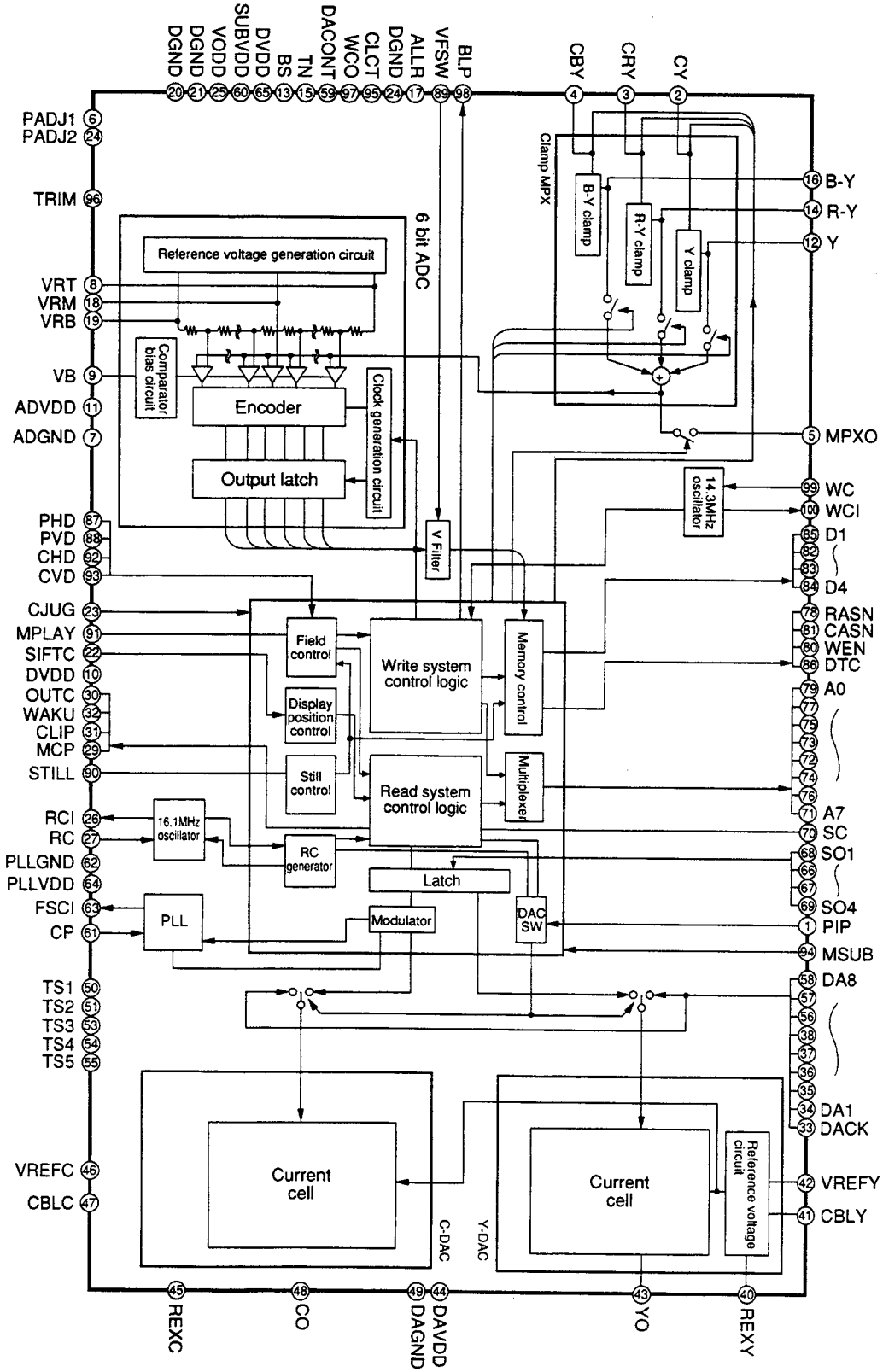
●Pin Fuction

No.	NAME	I/O	FUNCTION	ACT.
1	SROUT P62	O	Remote control signal output (envelope waveform)	H
2	CARY.OUT P61	O	Remote control signal carrier output	–
3	MUTE P61	O	Remote control through-line muting. (Muting on when the remote control signal is output.)	–
4	057	O	Not used.	–
5	P58	O	Not used.	–
6	CCRARY.IN P55/CNTR1	I	Remote control carrier signal input. (Carrier frequency decision)	L
7	P54/CHTR0	O	Not used.	–
8	P53/INT5	O	Not used.	–
9	P52/INT4	O	Not used.	–
10	P51/INT3	O	Not used.	–
11	SMART.ST P50/INT2	I/O	Communication with the main microcomputer. Communication request input/ output.	L
12	P47/Srdy	O	Not used.	–
13	SMART.CK P46/Sclk	I	Communication with the main microcomputer. Clock input.	–
14	P45/Txd	O	Not used.	–
15	SMART.DT P44/Rxd	I/O	Communication with the main microcomputer. Data input/output.	–
16	CARY.IN P43/INT1	I	Remote control carrier signal input. (Carrier frequency decision)	–
17	EMARGENCY P42/INT0	I	Back-up trigger signal input.	L
18	CNVss	I	GND	–
19	RESET	I	Reset input.	L
20	P41	O	Not used.	–
21	P40	O	Not used.	–
22	Xin	–	4 MHz oscillator	–
23	Xout	–		–
24	Vss	I/O	GND	–
25	P27/DB7	I/O	SRAM control data 7.	–
26	P26/DB6	I/O	SRAM control data 6.	–
27	P25/DB5	I/O	SRAM control data 5.	–
28	P24/DB4	I/O	SRAM control data 4.	H
29	P23/DB3	I/O	SRAM control data 3.	–
30	P22/DB2	I/O	SRAM control data 2.	L

No.	NAME	I/O	FUNCTION	ACT.
31	P21/DB1	I/O	SRAM control data 1.	–
32	P20/DB0	I/O	SRAM control data 0.	–
33	P17/AD15	O	SRAM control address 15.	–
34	P16/AD14	O	SRAM control address 14.	–
35	P15/AD13	O	SRAM control address 13.	–
36	P14/AD12	O	SRAM control address 12.	–
37	P13/AD11	O	SRAM control address 11.	–
38	P12/AD10	O	SRAM control address 10.	–
39	P11/AD9	O	SRAM control address 9.	–
40	P10/AD8	O	SRAM control address 8.	–
41	P07/AD7	O	SRAM control address 7.	–
42	P06/AD6	O	SRAM control address 6.	–
43	P05/AD5	O	SRAM control address 5.	–
44	P04/AD4	O	SRAM control address 4.	–
45	P03/AD3	O	SRAM control address 3.	–
46	P02/AD2	O	SRAM control address 2.	–
47	P01/AD1	O	SRAM control address 1.	–
48	P00/AD0	O	SRAM control address 0.	–
49	RD P37/RD	O	SRAM control read timing.	–
50	WR P36/WR	O	SRAM control write timing.	–
51	P35/SYNC	O	Not used.	–
52	P34/ϕ	O	Not used.	–
53	P33/RESET ou	O	Not used.	–
54	P32/ONW	O	Not used.	–
55	P31	O	Not used.	–
56	P30	O	Not used.	–
57	Vcc	O	Power supply 5V.	–
58	P71	O	Not used.	–
59	P70	O	Not used.	–
60	P67	O	Not used.	–
61	P68	O	Not used.	–
62	P65	O	Not used.	–
63	P64	O	Not used.	–
64	P63	O	Not used.	–

■ HD49412 FS (IC3002)
P IN P MEMORY CONTROLLER

●Block Diagram



●Pin Function

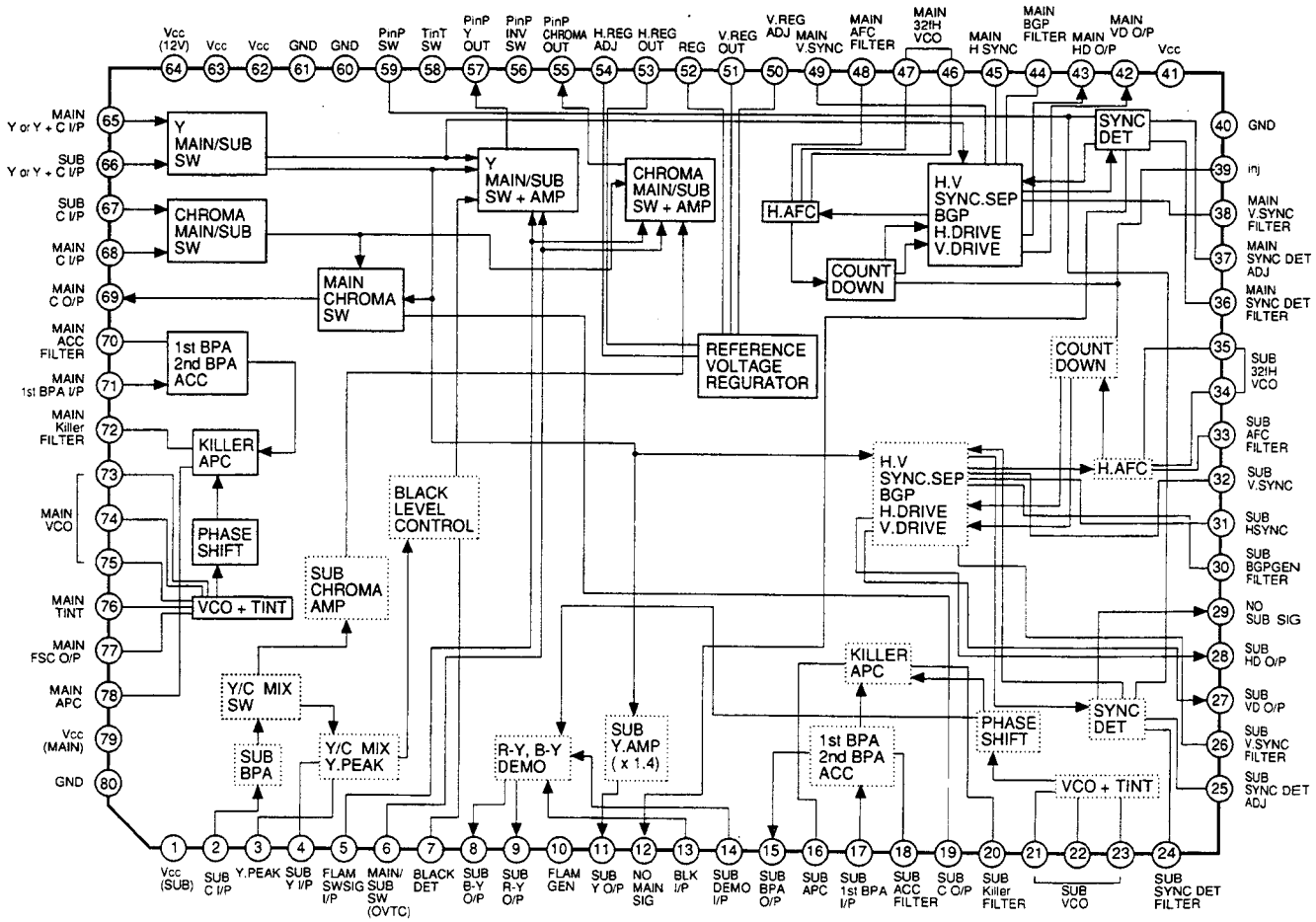
No.	NAME	I/O	FUNCTION	No.	NAME	I/O	FUNCTION
1	PIP	I	P-in-P mode input	39	(NC)	—	No connection
2	CY	—	Y signal clamping filter	40	REXY	—	DAC external resistor connection
3	CRY	—	R-Y signal clamping filter	41	CBLY	—	DAC bypass capacitor connection (1)
4	CBY	—	B-Y signal clamping filter	42	VREFY	I	DAC reference voltage input (1)
5	MPXO	—	Test-use pin	43	YO	O	Y signal output
6	PADJ1	I	Sub picture output timing control (1)	44	DAVDD	—	DAC V_{DD}
7	ADGND	—	Analog system ground	45	REXC	—	No connection
8	VRT	—	ADC reference voltage Hi level input	46	VREFC	—	DAC reference voltage input (2)
9	VB	O	ADC comparator bias voltage	47	CBLC	—	DAC bypass capacitor connection (2)
10	DVDD	—	Digital system V_{DD}	48	CO	O	C signal output
11	ADVDD	—	Analog system V_{DD}	49	DAGND	—	GND
12	Y	I	Y signal input	50	TS1	I	Test-use pin
13	BS	I	Test-use pin	51	TS2		
14	RY	I	R-Y signal input	52	(NC)	—	No connection
15	TN	I	Test-use pin	53	TS3	I	Test-use pin
16	BY	I	B-Y signal input	54	TS4		
17	ALLR	I	Test-use pin	55	TS5		
18	VRM	—	ADC reference voltage intermediate tap	56	DA6	I	Digital signal input
19	VRB	—	ADC reference voltage Lo level input	57	DA7		
20	DGND	—	Digital system ground	58	DA8		
21	DGND	—	Digital system ground	59	DACONT	I	Test-use pin
22	SIFTC	I	Sub picture position shift	60	SUB VDD	—	Substrate V_{DD}
23	CJUG	I	Sub picture on/off signal input	61	CP	—	PLL phase comparator filter
24	DGND	—	Digital system ground	62	PLLGND	—	PLL ground
25	VODD	—	Oscillator V_{DD}	63	FSCI	I	Main picture burst lock fsc input
26	RCI	O	Read clock feedback signal	64	PLLVDD	—	PLL V_{DD}
27	RC	I	Read clock signal input	65	DVDD	—	Digital system V_{DD}
28	PADJ2	I	Sub picture output timing control (2)	66	SO2	I	Memory read data input
29	MCP	O	Pedestal clamp timing signal	67	SO3		
30	OUTC	O	Sub picture output timing signal	68	SO1		
31	CLIP	O	Sub picture noise clip timing signal	69	SO4		
32	WAKU	O	Sub picture frame output timing signal	70	SC	O	Serial read clock output
33	DACK	I	DAC clock	71	A7 (MSB)	O	Memory address data output
34	DA1	I	Digital signal input	72	A4		
35	DA2			73	A3		
36	DA3			74	A5		
37	DA4			75	A2		
38	DA5			76	A6		
				77	A1		

No.	NAME	I/O	FUNCTION
78	RASN	O	Memory row address assigned output
79	A0 (LSB)	O	Memory address data output
80	WEN	O	Sub picture data write control output
81	CASN	O	Memory column address assigned output
82	D2	O	Memory write data output
83	D3		
84	D4		
85	D1		
86	DTN	O	Memory data transmission mode/read mode control output
87	PHD	I	Main picture horizontal sync signal input
88	PVD	I	Main picture vertical sync signal input

No.	NAME	I/O	FUNCTION
89	VFSW	I	Vertical filter on/off signal input
90	STILL	I	Sub picture still mode control
91	MPLAY	I	Control signal for special playback
92	CHD	I	Sub picture horizontal sync signal input
93	CVD	I	Sub picture voltage sync signal input
94	MSUB	I	Multi sub picture on/off signal input
95	CLCT	I	Test-use pin
96	TRIM	I	Test-use pin
97	WCO	I/O	Test-use pin
98	BLP	O	Blanking pulse output
99	WC	I	Write clock signal input
100	WCI	O	write clock feedback signal

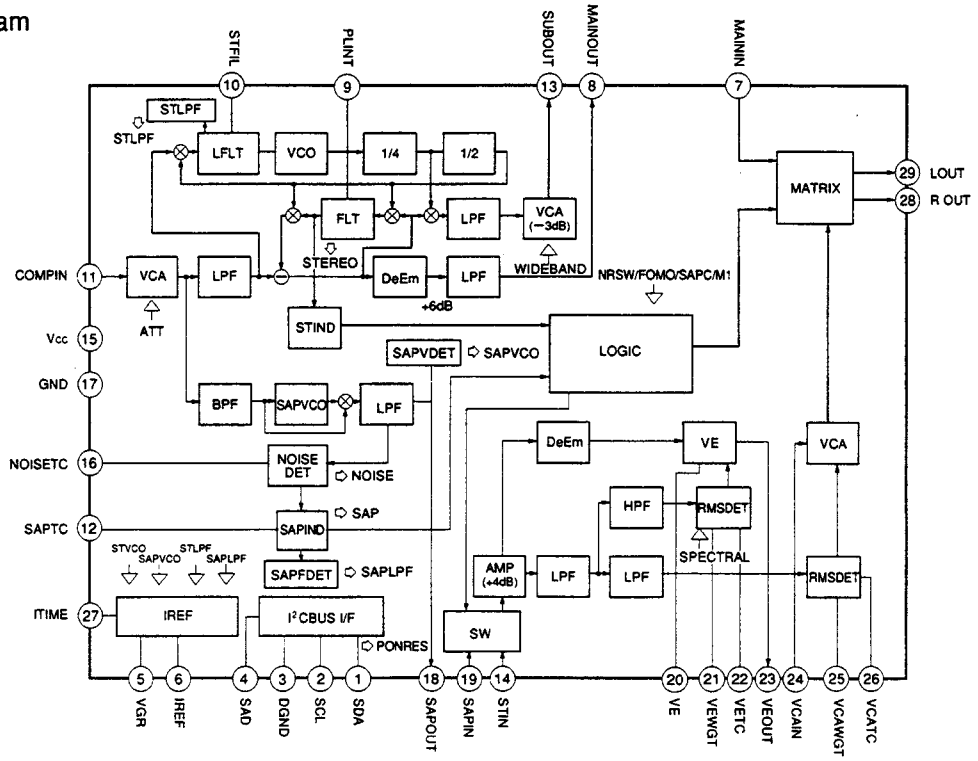
■ HA11569FS (IC3001)
P IN P CHROMA DECODER

●Block Diagram



■ CXA1734S (IC4901)
US MPX DECODER

●Block Diagram



●Pin Function

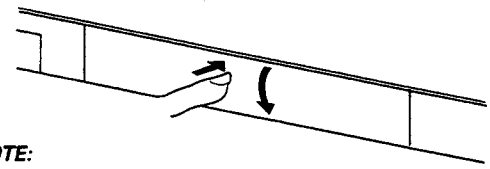
No.	NAME	FUNCTION
1	SDA	Serial data input/output pin.
2	SCL	Serial clock input pin.
3	DGND	GND of digital section.
4	SAD	Slave address control switch. By changing the voltage supplied to this pin, the slave address is selected.
5	VGR	Band gap reference output pin.
6	IREF	Sets the filter and VCO reference currents. The adjustment is performed with the BUS DATA according to the current flowing to this pin.
7	MAININ	Receives the signal (L+R) from the MAINOUT of Pin 8.
8	MAINOUT	Outputs the L+R signal.
9	PLINT	Integration pin of the pilot cancel circuit loop filter.
10	STFIL	Integration pin of the stereo block PLL loop filter.
11	COMPIN	Receives the audio multiple signal.
12	SAPTC	Sets the time-constant of the SAP carrier detection circuit.
13	SUBOUT	Outputs the L–R signal.
14	STIN	Receives the signal (L–R) from SUBOUT of Pin 13.
15	Vcc	Power supply voltage pin.
16	NOISETC	Sets the time-constant of the NOISE detection circuit.

No.	NAME	FUNCTION
17	GND	Analog GND pin.
18	SAPOUT	SAP FM detector output pin.
19	SAPIN	Receives the signal (SAP) from SAPOUT of Pin 18.
20	VE	Variable de-emphasis integration pin
21	VEWGT	Superimposing pin for the variable de-emphasis control effective value detection circuit.
22	VETC	Determines the return time-constant for the variable de-emphasis control effective value detection circuit.
23	VEOUT	Variable de-emphasis output pin.
24	VCAIN	VCA input pin. Receives the variable de-emphasis output signal of Pin 23 via the coupling capacitor.
25	VCAWGT	Superimposing pin for the VCA control effective value detection circuit.
26	VCATC	Determines the return time-constant for the VCA control effective value detection circuit.
27	ITIME	Sets the reference current for the effective value detection timing current. The timing current determines the return time-constant and variable de-emphasis characteristics of the detection circuit.
28	ROUT	Rch output pin.
29	LOUT	Lch output pin.
30	NC	—

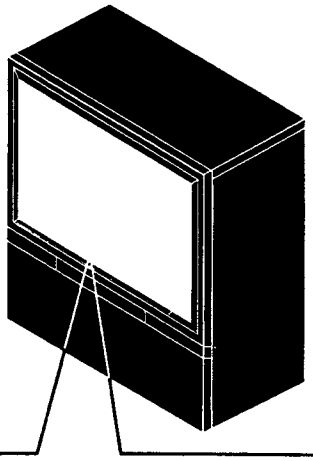
14. FACILITIES

● FRONT PANEL FACILITIES

A flip-down door conceals the control panel. Push gently and release, to open the door. To close the door, lift it back up into place. Push and release to open.



NOTE:
If you accidentally pull the door, it may not shut properly. Push in when shutting the door to restore it to normal operation.



Control Panel
Use the remote control unit to operate most functions.

① MAIN POWER switch (Except PRO-98)

Main power switch of this unit.
When the power is turned off in the STANDBY mode (RED indicator), the unit sets into the STANDBY mode (RED indicator) when the power is turned on again the next time.
Likewise, when the power is turned off at ON (GREEN indicator), the unit sets into the ON mode (GREEN indicator) when the power is turned on again the next time.

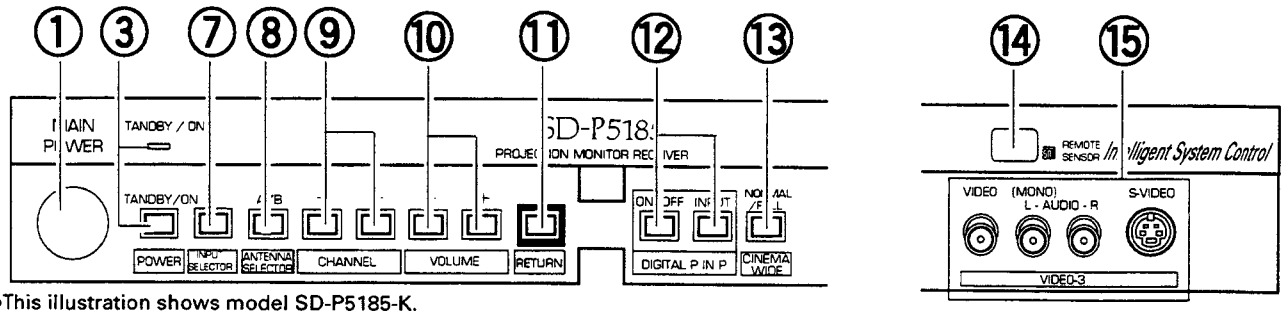
② MAIN POWER button (PRO-98 only)

Main power switch of this unit.
When the power is turned off in the STANDBY mode (RED indicator), the unit sets into the STANDBY mode (RED indicator) when the power is turned on again the next time.
Likewise, when the power is turned off at ON (GREEN indicator), the unit sets into the ON mode (GREEN indicator) when the power is turned on again the next time.

③ POWER switch and indicator (STANDBY/ON) (Except PRO-98)

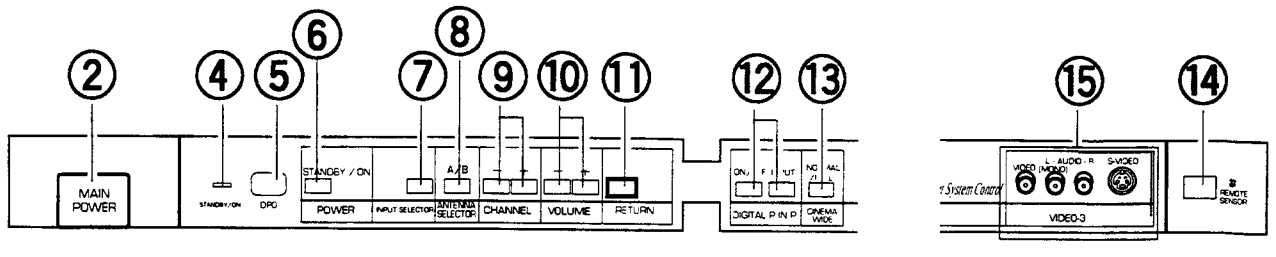
Press once to turn on the power. Press again to turn the power off. The POWER indicator lights up in green when the power is on. The indicator lights up in RED in the STANDBY mode.

•For SD-P5185, SD-P5183 and SD-P4683



•This illustration shows model SD-P5185-K.

•For PRO-98



ATTENTION
The Projection Monitor Receiver will not function properly in the following cases.
- Lightning storms.
- High static electricity environment.
- Poor voltage regulation in the power source.

If the Projection Monitor does not operate properly, reset it as follows:
Turn off MAIN POWER switch after some time, turn it back on with the MAIN POWER switch and POWER switch.

④ POWER STANDBY/ON indicator (PRO-98 only)
The POWER indicator lights up in green when the power is on. The indicator lights up in RED in the STANDBY mode.

⑤ DPO sensor (PRO-98 only)

⑥ POWER STANDBY/ON switch (PRO-98 only)
Press once to turn on the power. Press again to turn the power off.

⑦ INPUT SELECTOR button
Press to select your program source: TV, LD player, VIDEO1, VIDEO 2 or VIDEO 3. Each press of the button changes the selection to the next source.

⑧ ANTENNA SELECTOR(A/B) button
Press to switch between ANTENNA-A and ANTENNA-B when you wish to watch TV.

⑨ CHANNEL buttons
Press plus (+) or minus (–) to tune to a higher or lower channel. Only those channels in channel preset can be tuned in by this method.

⑩ VOLUME buttons
Press the plus (+) or minus (–) button to raise or lower the volume.

⑪ RETURN button
Press to set the Projection Monitor to its initial mode instantly if either sound or picture disappear from the speaker system or the screen during adjustment.
•Adjust the Projection Monitor again after pressing the RETURN button, as all settings have been cleared.

When the RETURN button is pressed, the Projection Monitor is set as follows:
PICTURE: Parameters, set to 0.
SOUND: Parameters, set to 0.
VOLUME: Remains at the last setting.
P-IN-P/ VNR/ MUTE/SUPER BASS/
F. SURROUND/DPO: Set to OFF.
INPUT SELECTOR: Set to TV.
TV CHANNEL: Remains at the last channel set.
MTS: Remains at the last setting.
CC: CC-OFF
CINEMA WIDE: Set to the NORMAL CINEMA mode.
PICTURE EQ: Set to OFF.
•When this button is pressed during the outer point convergence, the outer point convergence contents return to the initial state.

⑫ DIGITAL P IN P (Picture-in-Picture) buttons
ON/OFF: Press to turn the Picture-in-Picture function on and off.
INPUT: Press to select the input source for the sub picture.

NOTES:
- *When P IN P is set to on, the reflection signal is output to the Main screen from the S-VIDEO jacks not to the Sub picture. The composite signal passing through the RCA-type pin plug is output to both the Main screen and Sub picture.*
- *When the P IN P ON/OFF button is pressed and held for more than 4 seconds, the Projection Monitor will go into its demonstration mode (see front cover).*
- *When buttons other than P IN P ON/OFF are pressed, the demonstration mode ends.*
- *During still playback, special effect playback, or when searching an LD or video cassette tape visually forward or backward using the Main screen, shaking may occur in the Sub picture.*
- *While the P IN P function is on, the Sub picture may disappear when the Main screen signal is cut.*
  If the Main screen signal is supplied again, the original mode will be restored. Pictures appear on both the Main screen and the Sub picture when the Main screen signal is supplied.

⑬ CINEMA WIDE (NORMAL/FULL) button
Press to select whether the normal picture is to be displayed (NORMAL CINEMA mode) or the letter-box size (U. S. Standard wide) picture is to be displayed to fill the screen (FULL CINEMA).

⑭ REMOTE SENSOR
This sensor picks up infrared signals from the remote control unit.

⑮ INPUT jacks (VIDEO-3)
These front panel jacks are convenient for connecting a portable VCR, a video camera, a recorder or other temporary video source to the monitor. When the audio signal of the source to be connected is monaural, connect the L (MONO) jack.
Use the S-VIDEO jack when connecting an S-VHS or ED beta VCR, or an LD player which has a S-output jacks.

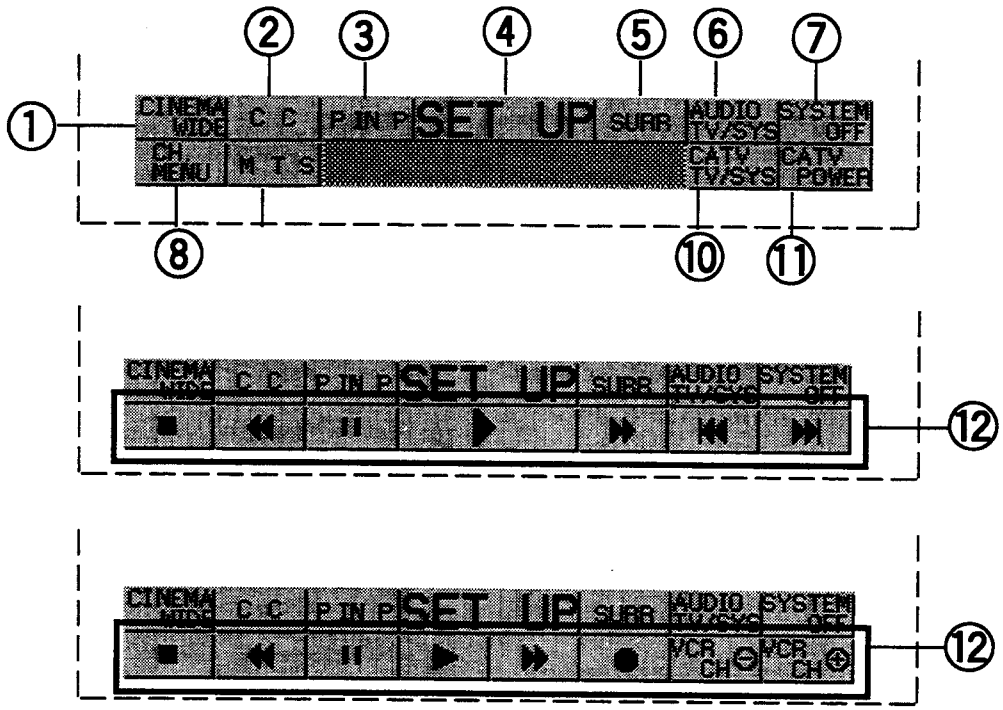
NOTE:
On rare occasions, an electrical discharge may occur inside the CRT. It makes a short, sharp pop and either no sound is produced or the volume level changes by itself. The Picture-in-Picture function will be cancelled automatically if an electrical discharge occurs when this function is engaged. However, VNR resumes automatically when an electrical discharge occurs. When other abnormal functionings are suspected, turn off the power of the unit at the ① MAIN POWER switch, and after some time, turn on the power with ① MAIN POWER switch and ② POWER switch. If the abnormal functionings cannot be corrected or repeat, contact an authorized PIONEER service center.

Caution:
Do not press any operation button on the Projection Monitor or on the remote control unit while recording is in progress. Signals from the REC jacks may be temporarily interrupted when a button is pressed.

● MENU FACILITIES

•For SD-P5185 and PRO-98

•When the MENU button of the remote control unit is pressed, the following screen will be displayed.



① CINEMA WIDE menu
Select to select the NORMAL CINEMA mode or FULL CINEMA mode.

② CC MODE menu
Select to select the mode of displaying the character information contained in closed caption broadcasting.

Select from OFF, CC-1, CC-2, CC-3, CC-4, T-1, T-2, T-3, or T-4.

③ Picture-in-Picture Control
Any program source connected to the Projection Monitor can be displayed on the screen simultaneously with any other source.

ON / OFF: Press to turn the Picture-in-Picture function on and off.

INPUT: Select to select the input source for the sub picture while in 1-sub picture mode.

SWAP: When only one sub picture is displayed, select to exchange the position of the main picture and sub picture.

SHIFT: Select to move the sub picture to a different place on the screen.

④ SET UP menu
Select to perform each setting.

⑤ SURR menu
In case the surround codes have been learned by REMOTE SET UP, call these codes.

⑥ AUDIO TV/SYS;
Set to the SYS when outputting remote control signal to the receiver connected to the monitor.

⑦ SYSTEM OFF;
Switches power to this unit, the TV and the currently selected function OFF.

⑧ CH. MENU menu
Select to select the station you wish to view on the monitor.

⑨ MTS (Multichannel TV Sound) menu
Select to select the reception mode for multichannel TV.
Select from MAIN, SAP, MAIN/SAP, or MONO.

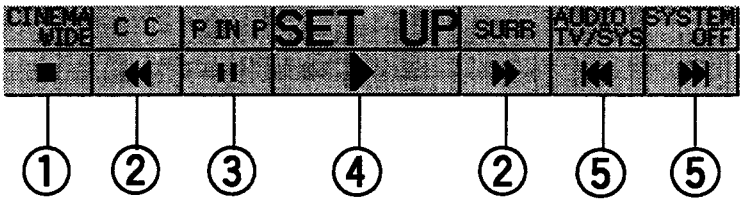
⑩ CATV TV/SYS;
Set whether to view TV broadcasts received by the antenna or view TV broadcasts received by the cable box.

⑪ CATV POWER;
Select to turn on or off the power of the CATV converter in the REMOTE SET UP condition.

⑫ LD/VCR control;
See the next page.

Connect System remote control and IR REPEATER.
LD players and VCRs that have been called up, setting up preset, and learned with referring to REMOTE SET UP can be operated.

⑫ LD Player Control



1 **Press the LD ONE TOUCH OPERATION button to set the input selector of the monitor to LD.**

2 **Turn on the MENU with the MENU button.**

3 **Press the POWER button to turn the power on.**

① **Stop (■) button**
Press once to stop playback.

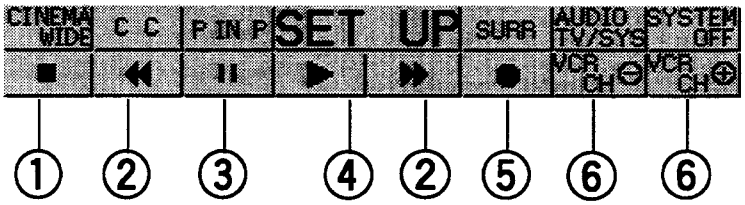
② **Scan (◄◄ ►►)button**
Press the ►► side of the button to search in the forward direction while playing a videodisk.
Press the ◄◄ side of the button to search in the reverse direction while playing a videodisk.

③ **Pause/Still (II) button**
Press to interrupt videodisk playback temporarily. Press the button again to resume playback.

④ **Play (►) button**
Press to begin playback

⑤ **Chapter Skip (I◄◄ ►►I) menu (monitor screen only)**
Press the ►►I side of the button to skip directly to the beginning of the next chapter, press the I◄◄ side to skip directly back to the beginning of the chapter currently in play. This operation can only be performed on an LD Player with a chapter skip function.

⑫ VCR control



1 **Press the VIDEO ONE TOUCH OPERATION button to set the input selector of the monitor to VIDEO.**

2 **Turn on the MENU with the MENU button.**

3 **Press the POWER button to turn the power on.**

① **Stop (■) button**
Press to stop playback.

② **Rewind/Fast Forward (◄◄/►►) button**
This button allows high-speed movement through parts of the tape that you don't wish to watch. Press the left side of the button to rewind the tape, and the right side to advance the tape.
During playback, use this button to search visually forward or backward.
Keep on pressing the left or right side of the button until the section you wish to watch appears, then release it to resume normal speed playback.

③ **Pause (II) button**
Temporarily interrupts recording or playback, producing a still picture playback.

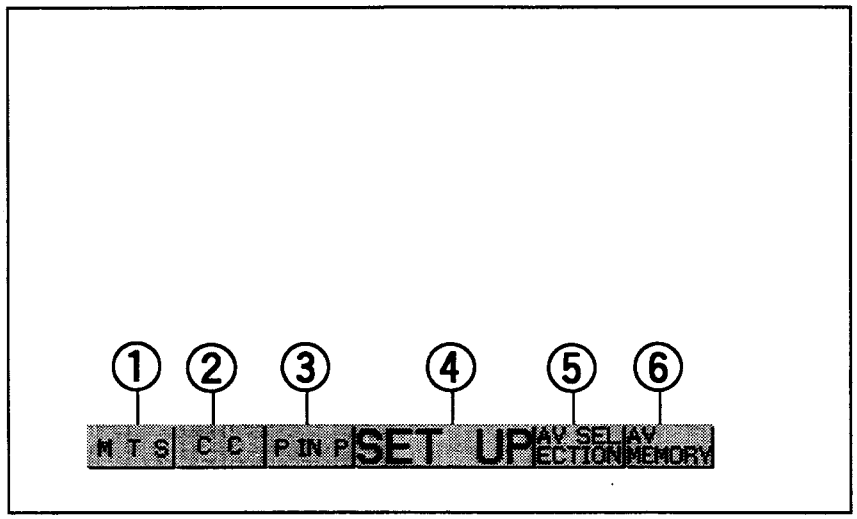
④ **Play (►) button**
Press to begin playback.

⑤ **REC buttons**
Select this menu to start recording.

⑥ **VCR CHANNEL +/ – menu (monitor screen only)**
To select the channel of the TV tuner on the VCR.

•For SD-P5183 and SD-P4683

•When the MENNU button of the remote control unit is pressed, the following screen will be displayed.



① MTS menu

Select to choose the reception mode for multichannel TV.
This will not be displayed when LD or VIDEO is selected with the INPUT SELECTOR button.

② CC MODE menu

Select to select the mode of displaying the character information contained in closed caption broadcasting.

Select from OFF, CC-1, CC-2, CC-3, CC-4, T-1, T-2, T-3, or T-4.

③ Picture-in-Picture Control menu

Any program source connected to the Projection Monitor can be displayed on the screen simultaneously with any other source.

ON / OFF: Press to turn the Picture-in-Picture function on and off.

INPUT: Select to select the input source for the sub picture.

SWAP: When only one subpicture is displayed, select to exchange the position of the main picture and subpicture.

SHIFT: Select to move the subpicture to a different place on the screen.

④ SET UP menu

Ⓐ Select to perform each setting.
Ⓑ Adjust the picture quality parameter and sets VNR, PICTURE EQ.
Ⓒ Adjust the sound quality parameter and sets F. SURR (front surround) and SUPER BASS.

⑤ AV SELECTION menu

Select to call the picture and sound quality preset with the Projection Monitor.

⑥ AV MEMORY menu

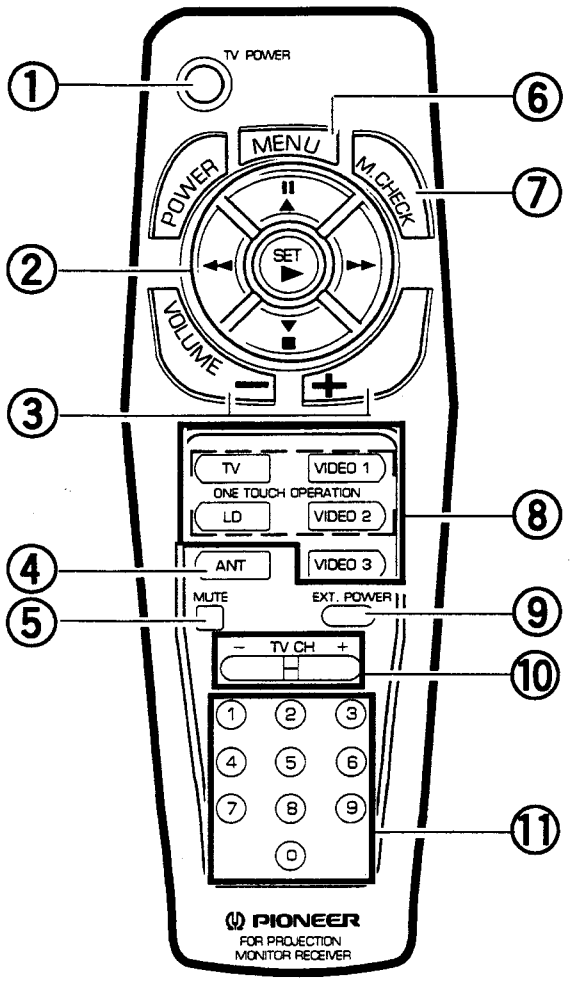
Select to recall and set the AV MEMORY.

NOTE:
The "EXIT" item may be displayed on the screen when selecting menus.
If EXIT is selected, the screen will return to previous display.

● REMOTE CONTROL UNIT FACILITIES

•For SD-P5185 and PRO-98

TV CONTROL BUTTONS



① TV POWER button

Turns the power on the monitor on and off.

② Select/Adjust/Set buttons (SET ▲, ▼, ◄, ►)

▲, ▼, ◄, ►:Press to select, adjust or set items on the menu screen.

SET: When the menu is on, press to execute an operation selected with the Select/Adjust buttons.

③ VOL (Volume) +, – buttons

Press the + button to increase the – button to decrease it. Volume adjustment will appear on the screen as numbers and a bar graph. '63' indicates the maximum volume level. The display will disappear from the screen after 2 seconds.

*Volume display will change color automatically according to the selected input mode.

When AUDIO TV/SYS is set to AUDIO SYS, the sound volume of the connected receiver is adjusted.

Display colors

TV: Green
LD: Cyan (Greenish Blue)
VIDEO 1: Purple
VIDEO 2: Blue
VIDEO 3: Yellow

④ ANT (antenna selector) button

Press to switch between ANTENNA-A and ANTENNA-B when you wish to watch TV.

⑤ MUTE button

Press to temporarily turn off the sound. Press again to return to the previous volume level. This is useful, for example, when answering the telephone. The volume display will turn red while the mute function is engaged and will disappear from screen when the mute function is cancelled. If the mute function is left on for over approx. 8 minutes, the function will be cancelled automatically, and the volume level will be reset to 0.

When AUDIO TV/SYS is set to AUDIO SYS, the audio output of the connected receiver is muted.

⑥ MENU button

Press to turn on the menu screen for use in function selection. Press again to return to normal operation.

The selected items are displayed in purple, and the items can be selected with the ▲, ▼ ,◄ and ► buttons.

⑦ M. CHECK button

Indicates whether the menu is on or off.

When it is on, △, ▽, ◁ and ▷ light. When it is off, a ⑧ ONE TOUCH OPERATION button lights to indicate the current function.

If you press the button again while it is lit, remote control functions change. When the menu is on, ② Select/Adjust buttons (△, ▽, ◁ and ▷) light.

⑧ ONE TOUCH OPERATION buttons

TV, LD VIDEO1 , VIDEO2:

Pressing these buttons automatically calls up ONE TOUCH OPERATION setting.

Also, if power to this unit is OFF, it is switched ON, and operation automatically switches to the selected function.

VIDEO 3:

Press this button to select VIDEO 3.

ONE TOUCH OPERATION is not possible.

⑨ EXT. POWER button

Press to turn on/off the power of the external component connected receiver.

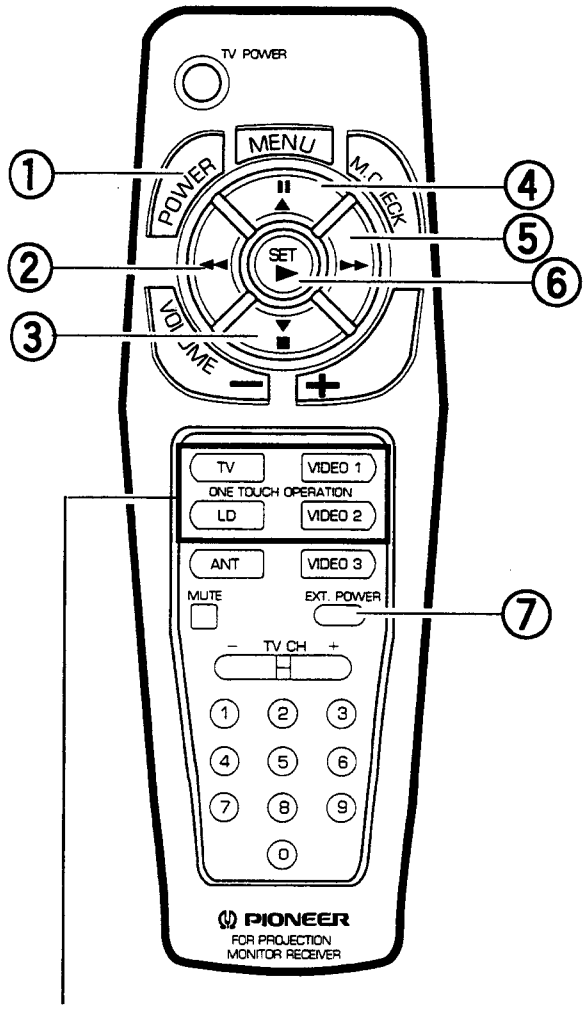
⑩ TV. CH (Channel) +, – buttons

Press plus (+) or minus (–) to tune in higher or lower channel. Only those channels in channel preset can be tuned in by this method.

⑪ Direct Channel Selection buttons

Press the button (or buttons) that correspond to the channel that you wish to watch, to switch directly to that channel from any other channel.

• When M. CHECK button is continuously pressed during the Main menu off, the remote control function is switched. At this time, a currently selected function lights up.
Functions selected by the M. CHECk button or units selected by the ONE TOUCH OPERATION button can be controlled by the monitor power is in standby or off mode.



ONE TOUCH OPERATION buttons switch between each of the function.

VCR1/VCR 2 operation

① POWER button
Switches the VCR power ON/OFF.

② ◄◄ (REW) button
Rewinds the tape and arrows picture search.

③ ■ (STOP) button
Stops the tape transport.

④ II (PAUSE/STILL) button
Sets pause and still picture.

⑤ ►► (FF) button
Rapidly advances the tape and arrows picture search.

⑥ ► (PLAY) button
Selects playback.

LD player operation

① POWER button
Switches the LD player power ON/OFF.

② ◄◄ (SCAN/CHAPTER SEARCH) button
Pressing quickly once takes you to the start of the chapter currently playing. Each time you press it, you move back to the start of the previous chapter. Continue pressing to rewind.

③ ■ (STOP) button
Playback is stopped when pressed once.
With some LD players, pressing the button twice may open the disc tray.

④ II (PAUSE) button
Video and audio are stopped and playback is paused.

⑤ ►► (SCAN/CHAPTER SEARCH) button
Pressing quickly once takes you to the start of the next chapter: Each time you press it, you move ahead to the start of the next chapter. Continue pressing for fast forward.

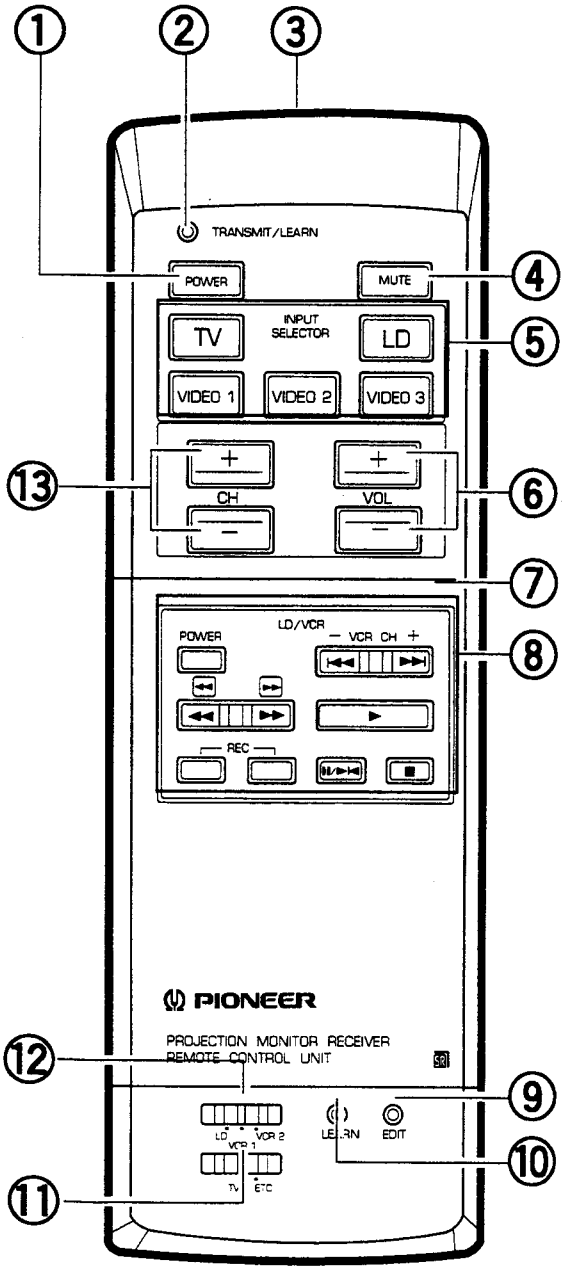
⑥ ► (PLAY) button
Selects playback.

Receiver operation

⑦ EXT. POWER button
Switches the Receiver power ON/OFF.

Note for operating other components:
- *REMOTE CONTROLLING OF ANY OTHER OF YOUR AUDIO-VISUAL COMPONENTS VIA THIS UNIT REQUIRES:*
  All components must be remote controllable (have a sensor window on the front panel) to receive a direct command from this unit, upon successful learning of those commands by this programmable unit.
- *Some models cannot operate a part of functions. In such case, use a remote control attached to the components.*

•For SD-P5183 and SD-P4683



① POWER button
Turns the power of the monitor on and off.

② TRANSMIT/LEARN indicator
Flashes when commands are being sent when one of the remote control buttons is pressed.

③ Transmitting and Remote Control Code Receiver Window
Transmits remote control signals using infrared rays.
When memorizing a remote control code, the window will function as an infrared receiver.

④ MUTE button
Press to temporarily turn off the sound. Press again to return to the previous volume level. This is useful, for example, when answering the telephone. The volume display will turn red while the mute function is engaged and will disappear from screen when the mute function is cancelled. If the mute function is left on for over approx. 8 minutes, the function will be cancelled automatically, and the volume level will be reset to 0.

⑤ INPUT SELECTOR buttons (TV/LD/VIDEO 1/ VIDEO 2/VIDEO 3)
Press the button to select source you wish to watch. The screen will display your selection.

⑥ VOL (Volume) +, – buttons
Press the + button to increase the – button to decrease it. Volume adjustment will appear on the screen as numbers and a bar graph. '63' indicates the maximum volume level.
The display will disappear from the screen after 2 seconds.
* Volume display will change color automatically according to the selected input mode.

Display colors
TV: Green
LD: Cyan (Greenish Blue)
VIDEO 1: Purple
VIDEO 2: Blue
VIDEO 3: Yellow

⑦ Top panel
Operation buttons contained inside the top panel are for more attractive feature operations.
• After all operations are completed, make sure that the top panel is securely closed.

⑧ LD/VCR control buttons
If your LD player or VCR (video cassette recorder) is a PIONEER model bearing the SR mark, you can control the component using these buttons.

⑨ EDIT button
Press to set the preset code edit mode by setting Transmit Mode switch to LD, VCR 1 or VCR 2.

⑩ LEARN button
This setting activates the capability of the unit to "learn" and store command codes from other remote control units .

⑪ TV/ETC switch
Set to the position that corresponds to the component you wish to control, choose between the Projection Monitor and other LD player or video cassette recorder, using commands programmed in the remote control unit.

TV: To send remote control code commands to Pioneer marked models.

ETC: To send programmed commands.

⑫ Transmit Mode switch
Set to the position that corresponds to the component you wish to operate.

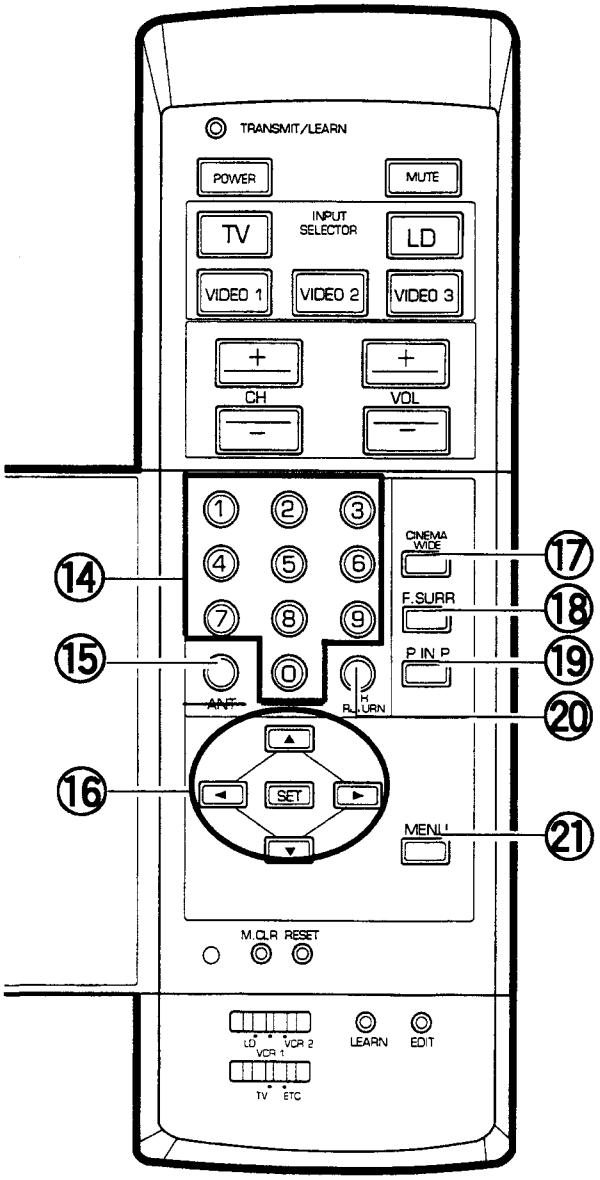
LD: To control the LD player.

VCR 1: To send commands to VCR 1.

VCR 2: No commands are preset.

- If you wish to use LD/VCR control buttons for VCR 2 remote control, store command codes from other remote control units in the LD/VCR control buttons.

⑬ CH (Channel) +, – buttons
Press plus (+) or minus (–) to tune in higher or lower channel. Only those channels in channel preset can be tuned in by this method.



Inside the top panel

⑭ Direct Channel Selection buttons
Press the button (or buttons) that correspond to the channel that you wish to watch, to switch directly to that channel from any other channel.

⑮ ANT (antenna selector) button
Press to switch between ANTENNA-A and ANTENNA-B when you wish to watch TV.

⑯ Select/Adjust/Set buttons (Set ▲, ▼, ◄, ►)
▲, ▼, ◄, ►:Press to select, adjust or set items on the menu screen.

SET: Press to activate the selected function.

⑰ CINEMA WIDE button
Press to select whether the normal picture is to be displayed (NORMAL CINEMA mode) or the letter - box size (U. S. Standard wide) picture is to be displayed to fill the screen (FULL CINEMA).

⑱ F.SURR button
Press to select front surround.

⑲ P IN P button
Press to turn the Picture-in-Picture function on and off.

⑳ CH RETURN (channel return) button
Press to switch between the current channel and the channel you were watching immediately before. This is useful, for example, if you wish to switch back and forth between two sporting events.

㉑ MENU button
Press to turn on the menu screen for use in function selection. Press again to return to normal operation.
The selected items are displayed in purple, and the items can be selected with the ▲, ▼ ,◄ and ► buttons.

15. CHANNEL PRESET AND PASSWORD CODE

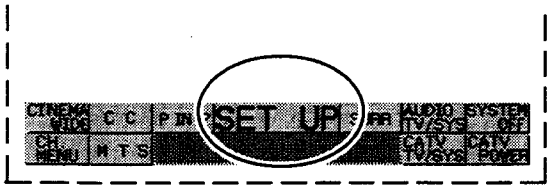
AUTO CHANNEL PRESET

•Automatically presets channels in your area.

When SD-P5185 and PRO-98

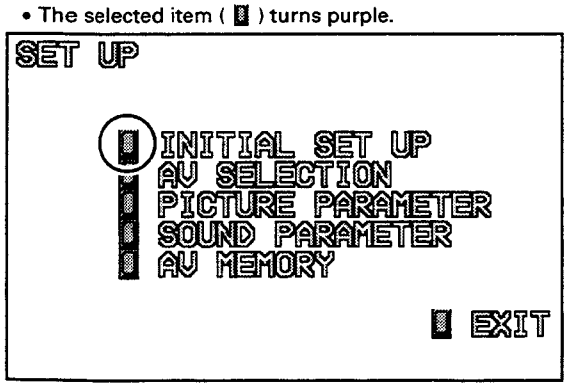
1 Set the input to TV with the ONE TOUCH OPERATION button on the remote control unit or press the INPUT SELECTOR button on the control panel so that "ANT. A CHXX" appears on the monitor screen.

2 Turn on the menu with the MENU button and press the ▲, ▼, ◄ or ► button so that the SET UP display turns purple.



3 Turn on the SET UP menu with the SET button and select the INITIAL SET UP with the ▲ or ▼ button.

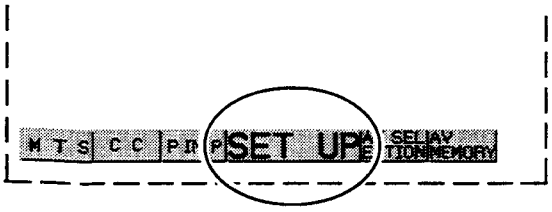
• The selected item (▮) turns purple.



When SD-P5183 and SD-P4683

1 Set the input to TV with the INPUT SELECTOR button on the remote control unit or press the INPUT SELECTOR button on the control panel so that "ANT. A CHXX" appears on the monitor screen.

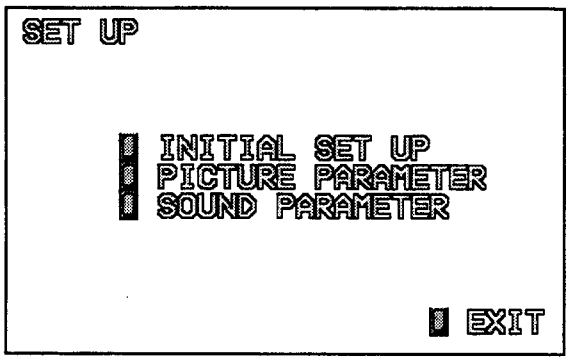
2 Turn on the menu with the MENU button and press the ◄ or ► button so that the SET UP display turns purple.



When SD-P5183 and SD-P4683

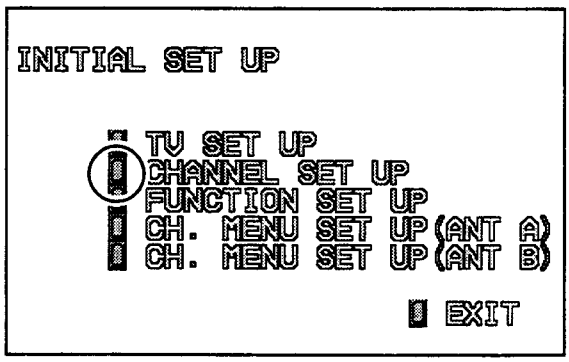
3 Turn on the SET UP menu with the SET button and select the INITIAL SET UP with the ▲ or ▼ button.

• The selected item (▮) turns purple.



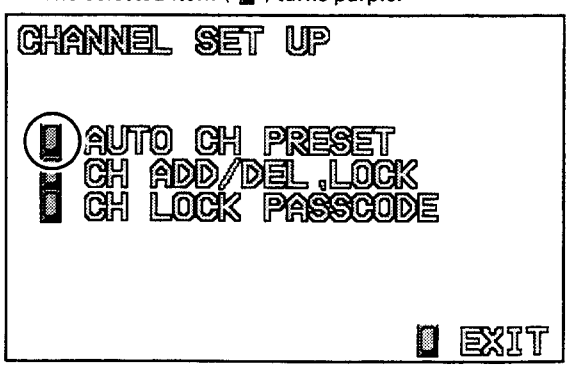
4 Turn on the INITIAL SET UP menu with the SET button and select the CHANNEL SET UP with the ▲ or ▼ button.

• The selected item (▮) turns purple.



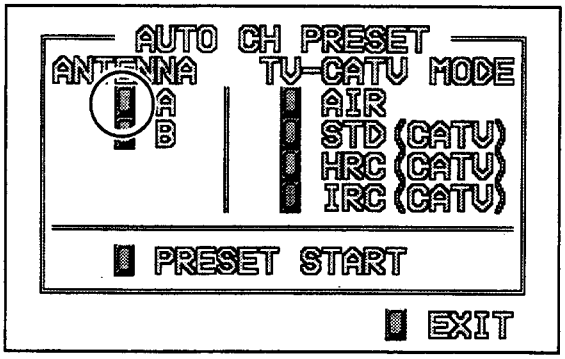
5 Turn on the CHANNEL SET UP menu with the SET button and select the AUTO CH PRESET with the ▲ or ▼ button.

• The selected item (▮) turns purple.



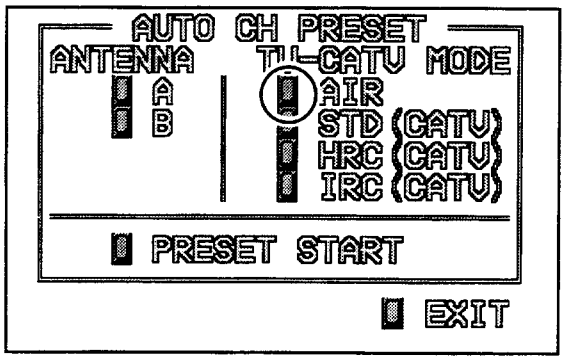
6 Press the SET button and select A or B from the ANTENNA item with the ▲ or ▼ button.

- The selected item (▮) turns purple.
- A is selected as an example.



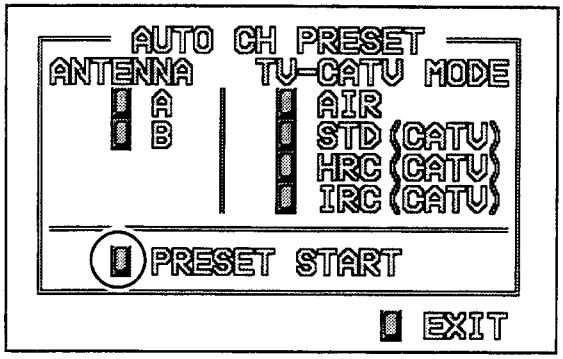
7 Press the SET button (A turns yellow) and select AIR, STD, HRC or IRC from the TV-CATV mode with the ▲ or ▼ button.

- The selected item (▮) turns purple.
- AIR is selected as an example.
- Ask your dealer or cable service provider which is correct for your local CATV system.



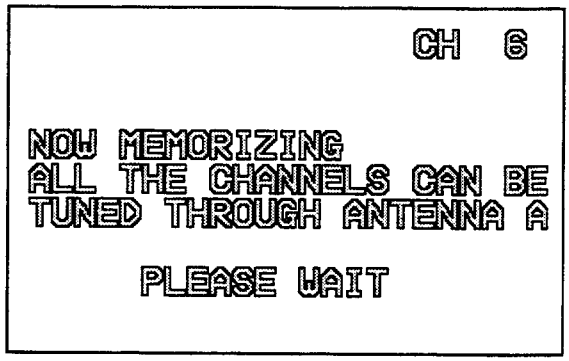
8 When the 6 and 7 settings are completed, Press the SET button.

- The PRESET START (▮) turns purple.



9 Press the SET button.

- AUTO CHANNEL PRESET starts.

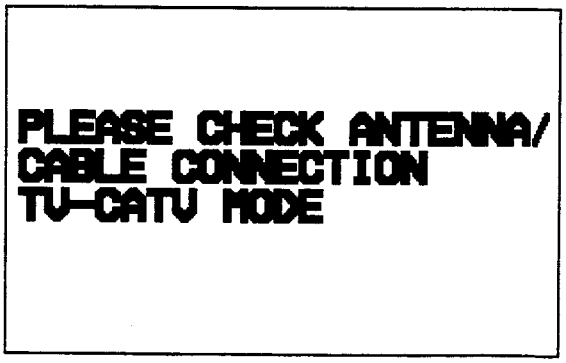


- When AUTO CHANNEL PRESET ends, step 6 is returned, and ANTENNA B is selected automatically. Perform steps 7 and 8 if ANTENNA B is being used.

10 Press MENU button to return to normal operation.

NOTE:

- *If EXIT is selected, the screen will return to previous display. If AUTO CHANNEL PRESET is not performed, return to the display before by selecting EXIT after selecting TV-CATV mode, select CH. ADD/DEL, LOCK, and select the channel to be received.*
- *If the ANTENNA is not connected, the following will be displayed. Check if the antenna/cable is connected.*



ADDING, DELETING, AND LOCKING CHANNELS

- Channels preset can be added or deleted by AUTO CHANNEL PRESET.

ADD ..... Manually presets channels that were not preset by AUTO CHANNEL PRESET.

DEL ..... Deletes channels that are not required for reception. When this setting is set, the channels can be skipped when receiving channels with the + and - CH (channel) buttons.

CH LOCK ... Sets channels so that they will be concealed from users who do not input the password code. The method of setting this function is described from [8] of page 181. See pages 182 and 183 for the method of inputting the password code.

- Perform the following after completing AUTO CHANNEL PRESET.

When SD-P5185 and PRO-98

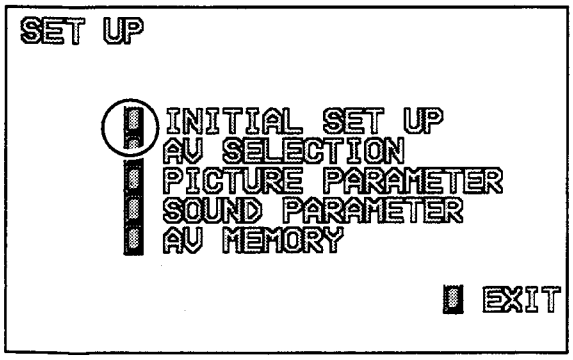
ANTENNA – A

[1] **Set the input to TV with the ONE TOUCH OPERATION button on the remote control unit or press the INPUT SELECTOR button on the control panel so that "ANT. A (ANT B) CHXX" appears on the monitor screen.**

[2] **Turn on the menu with the MENU button and press the ▲, ▼, ◄ or ► button so that the SET UP display turns purple.**

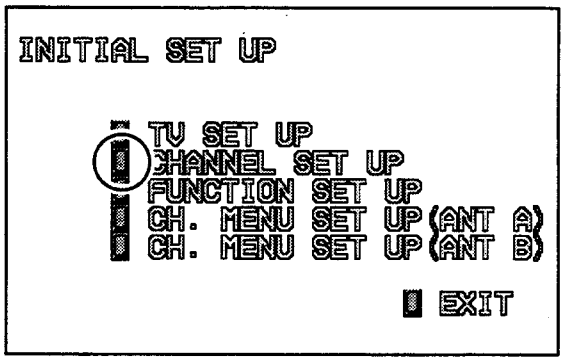
[3] **Turn on the SET UP menu with the SET button and select the INITIAL SET UP with the ▲ or ▼ button.**

- The selected item (▮) turns purple.



[4] **Turn on the INITIAL SET UP menu with the SET button and select the CHANNEL SET UP with the ▲ or ▼ button.**

- The selected item (▮) turns purple.



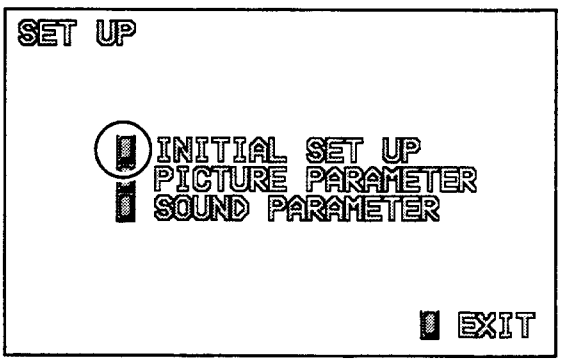
When SD-P5183 and SD-P4683

[1] **Set the input to TV with the INPUT SELECTOR button on the remote control unit or press the INPUT SELECTOR button on the control panel so that "ANT. A (ANT B) CHXX" appears on the monitor screen.**

[2] **Turn on the menu with the MENU button and press the ◄ or ► button so that the SET UP display turns purple.**

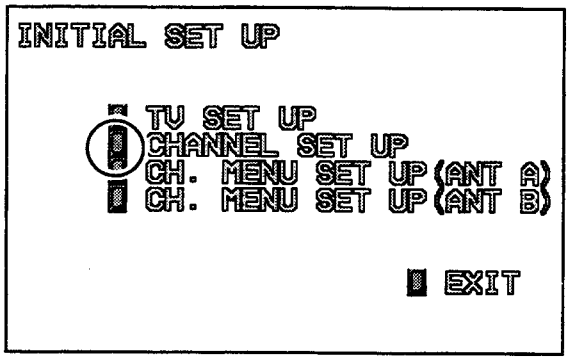
[3] **Turn on the SET UP menu with the SET button and select the INITIAL SET UP with the ▲ or ▼ button.**

- The selected item (▮) turns purple.

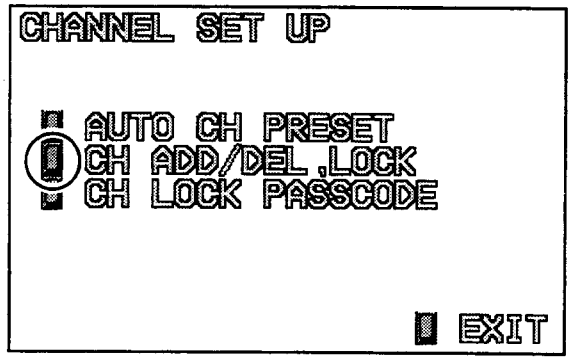


When SD-P5183 and SD-P4683

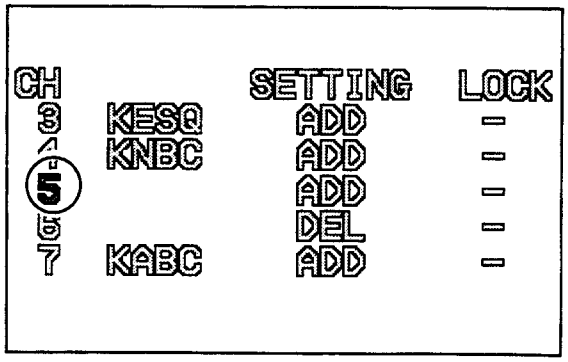
4 **Turn on the INITIAL SET UP menu with the SET button and select the CHANNEL SET UP with the ▲ or ▼ button.**
- The selected item (▮) turns purple.



5 **Turn on the CHANNEL SET UP menu with the SET button and select the CH ADD/DEL, LOCK with the ▲ or ▼ button.**
- The selected item (▮) turns purple.

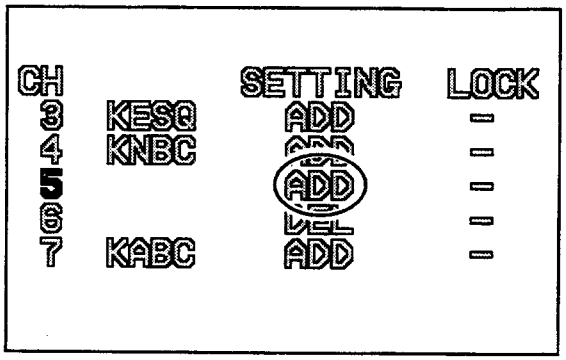


6 **Press the SET button and select the channels to be added and deleted with the ▲ or ▼ button.**
- The selected channel (Ex. 5) turns purple.

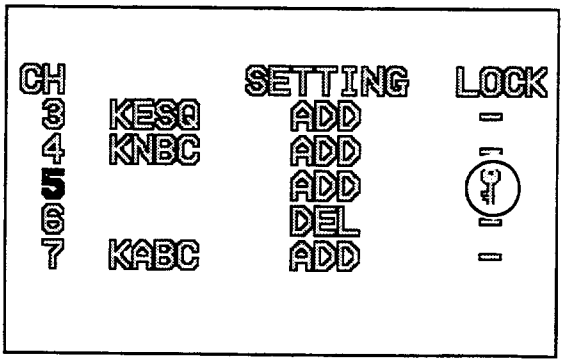


7 **(When SD-P5185 and PRO-98)**
Press the SET button and select ADD (add) or DEL (delete) with the ◄ or ► button.

7 **(When SD-P5183 and SD-P4683)**
Select ADD (add) or DEL (delete) with the ◄ or ► button.



8 **Press the SET button and select channel lock (🔑) with the ◄ or ► button to lock the channel.**
- Can be set from the 🔑 to ═ only after the password code has been entered.



NOTE:
- *If a channel has been locked, be sure to perform the ENTERING THE PASSWORD CODE setting.*
- *As CH LOCK locks the channel number, when the TV-CATV mode is changed, it has to be set again.*

9 **Press the SET button.**

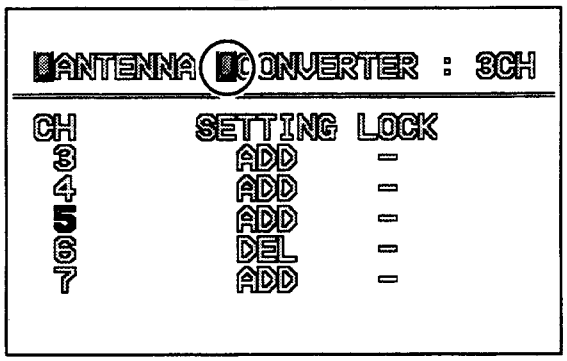
10 **Repeat steps 6 to 8.**

11 **Press the MENU button to return to normal operation.**

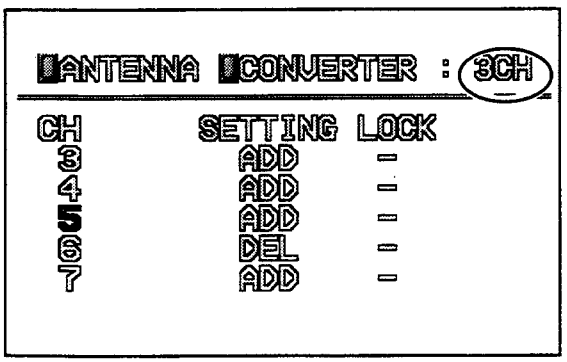
ANTENNA – B
(SD-P5185 and PRO-98 only)

Setting performed to connect the cable box to ANTENNA-B and select channels using the Monitor's remote control.

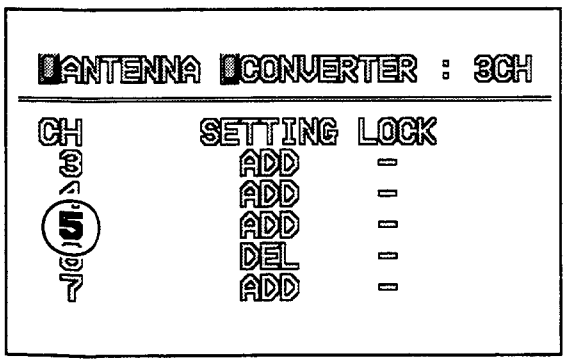
1. **Switch the ANTENNA-B with the ANT button.**
2. **Refer the steps 1 to 5 on pages 180 and 181.**
3. **Press SET button and select CONVERTER with the ◄ or ► button.**
   • The selected item (▮) turns purple.



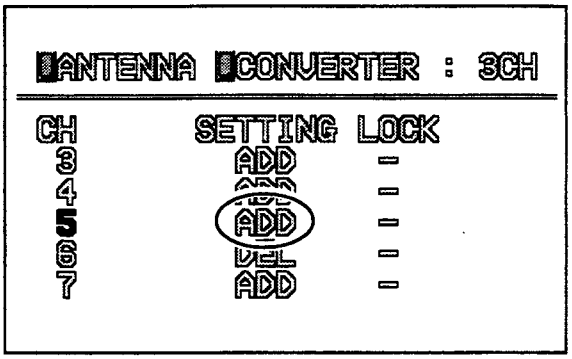
4. **Press SET button (CONVERTER turns yellow) and select the CONVERTER's channel number with the SET button.**



5. **Select the CH number to be added and deleted with the ▲ or ▼ button.**
   • The selected channel (Ex. 5) turns purple.



6. **Select ADD (add) or DEL (delete) with the ◄ or ► button.**

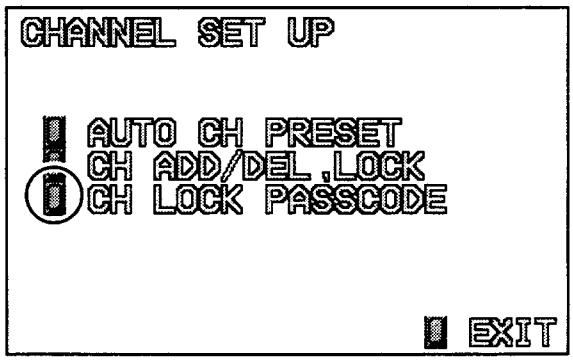


7. **Refer to the steps 8 to 11 on page 181.**

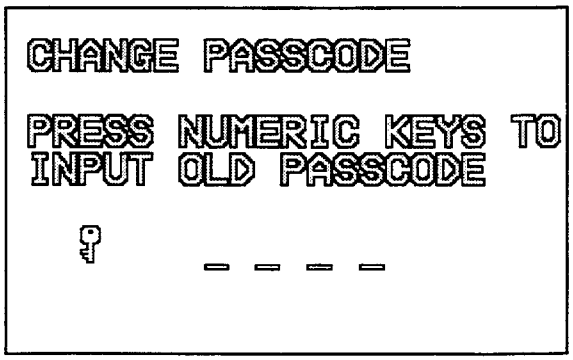
ENTERING THE PASSWORD CODE FOR CHANNEL LOCK

•Enter the password codes. You can view the locked channel program.

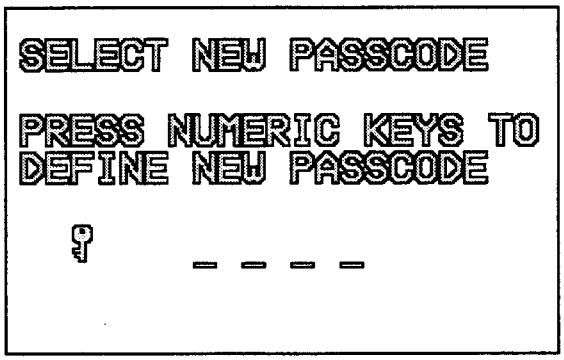
1. **Perform steps 1 to 4 of page 180.**
2. **Turn on the CHANNEL SET UP menu with the SET button and select the CH LOCK PASSCODE with the ▲ or ▼ button.**
   • The selected item (▮) turns purple.



3. **Press the SET button and input the old password code with the numerical buttons of the remote control unit.**
   • This password code is set to "0000" when the monitor leaves the factory.



4 Input the new password code with the numerical buttons of the remote control unit.



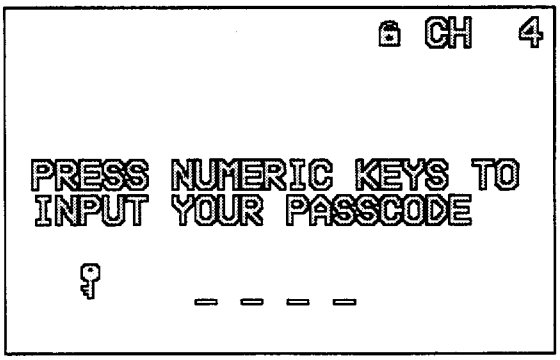
5 Press the MENU button to return to normal operation.

NOTES:

- *The locked channel will not be registered unless the power is turned off once.*

To view channel locked.

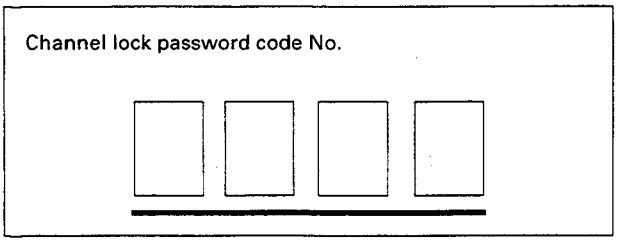
1. Select the locked channel.
   - The following will be displayed.



2. Enter the password code.

•If you forget the password code

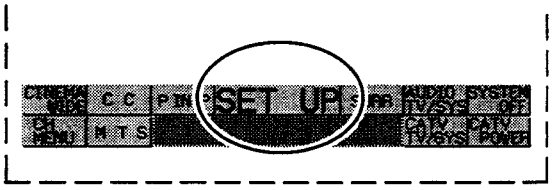
Press the RETURN button on the front panel for more than four seconds. The password code will become "0000".



SET THE CH. MENU (For SD-P5185 and PRO-98)

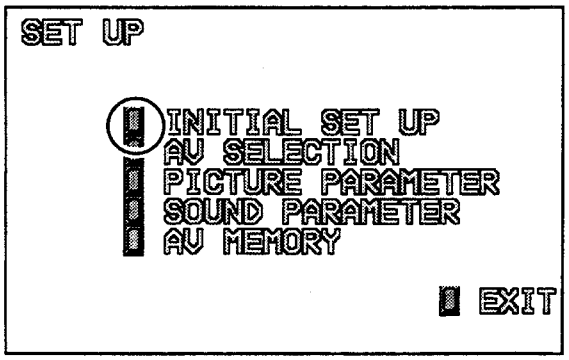
You can change the channel label preset with AUTO CHANNEL PRESET and set the priority order of displaying channels on the TV screen.
The input label can be up to 4 characters long using the 43 characters, including - (space), listed below.

1 Turn on the menu with the MENU button and press the ▲, ▼, ◄ or ► button so that the SET UP display turns purple.



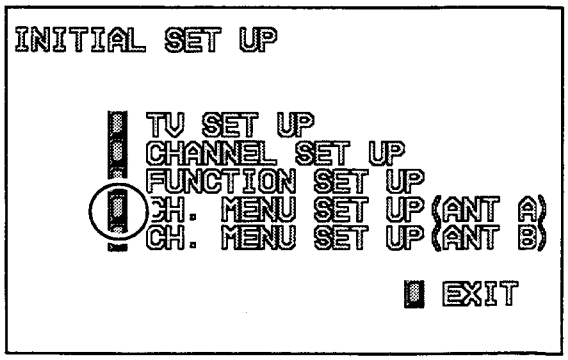
2 Turn on the SET UP menu with the SET button and select the INITIAL SET UP with the ▲ or ▼ button.

- The selected item (▮) turns purple.



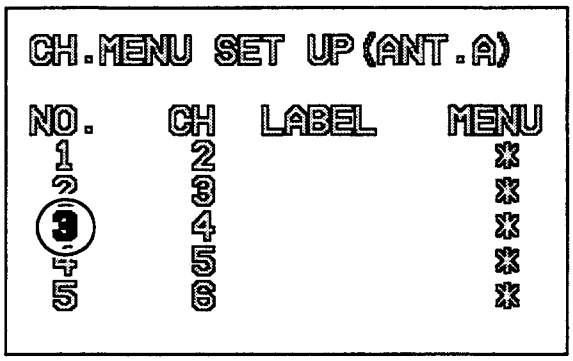
3 Turn on the INITIAL SET UP menu with the SET button and select the CH. MENU SET UP (ANT A or ANT B) with the ▲ or ▼ button.

- The selected item (▮) turns purple.

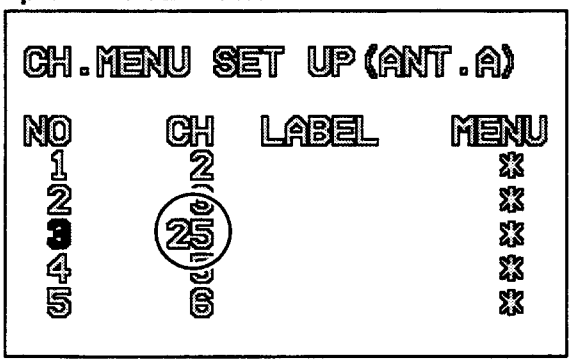


4 Press the SET button and select the number with the ▲ or ▼ button.

- In case a previously entered station label is to be modified, select the channel using the ▲ and ▼ button. (The selected channel number and the station label turn purple).

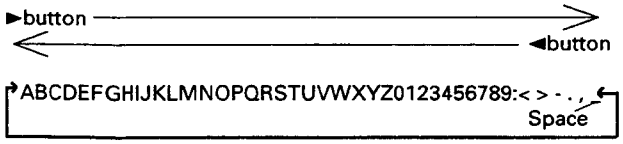


5 Select a number with the ◄ or ► button and press the SET button.



6 Press the SET button and select a character with the ◄ or ► button, and press the SET button.

- By repeating steps 4 and 5, station labels of up to 20 channels can be entered.
- To enter the input labels in No.6 to No. 20, press ▼ to make the number appear on the screen, then follow steps 4 and 5.

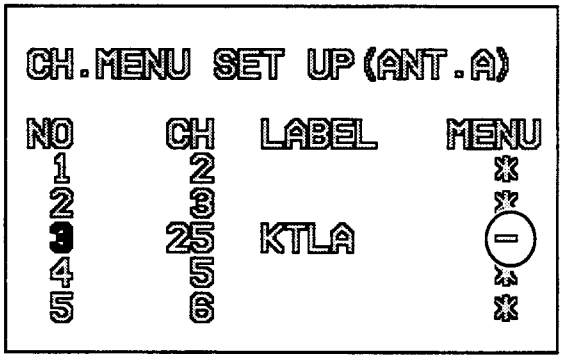


- UP to 4 characters can be entered by repeating step 6.

7 Press the SET button to select the setting channels displayed on the monitor screen or not with the ◄ or ► button.

✱ ..... If ▲, ▼, ◄ or ► button is pressed when INPUT SELECTOR is set to TV, the channel will be displayed on the Monitor screen.

— ..... If ▲, ▼, ◄ or ► button is pressed when INPUT SELECTOR is set to TV, the channel will not be displayed on the Monitor screen.



8 Press the MENU button to return to normal operation.

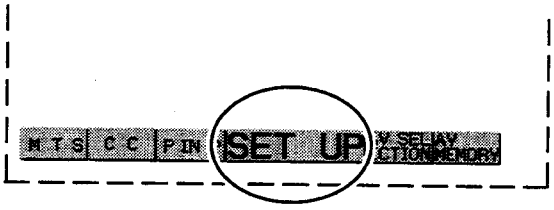
NOTES:

- *When selecting the channel, if any character (not number) is input in the first digit, the setting in progress will be cancelled and the previously set channel will be displayed. To make setting for channel 1-9, channel 2 for example, first enter 0 or _ (space) , then 2.*

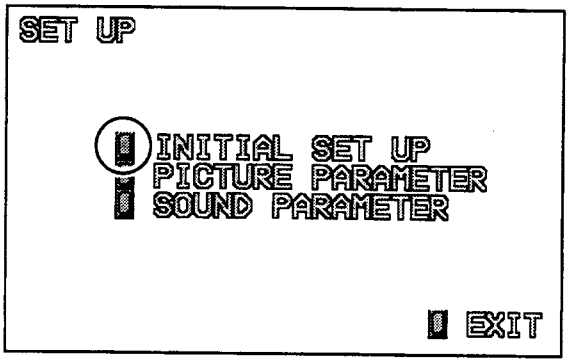
SET THE CH. MENU
(For SD-P5183 and SD-P4683)

You can change the channel label preset with AUTO CHANNEL PRESET and set the priority order of displaying channels on the TV screen.
The input label can be up to 4 characters long using the 43 characters, including - (space), listed below.

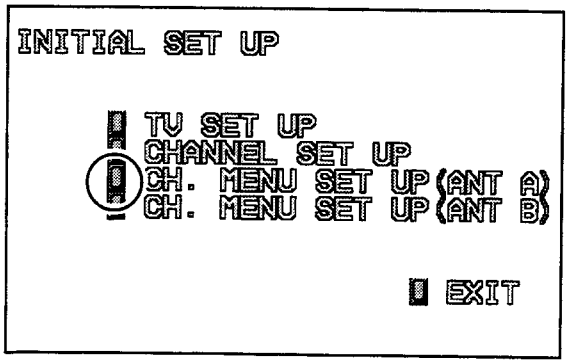
1 Turn on the menu with the MENU button and press the ▲ or ▼ button so that the SET UP display turns purple.



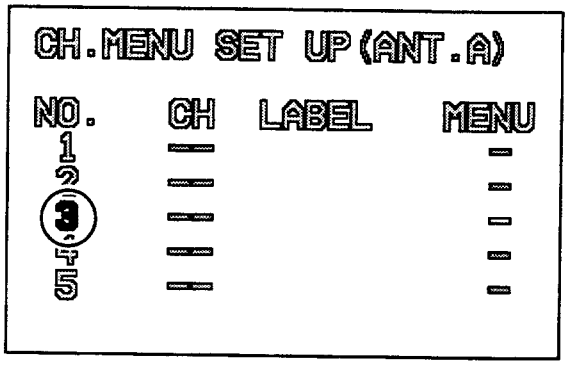
2 Turn on the SET UP menu with the SET button and select the INITIAL SET UP with the ▲ or ▼ button.
- The selected item (▮) turns purple.



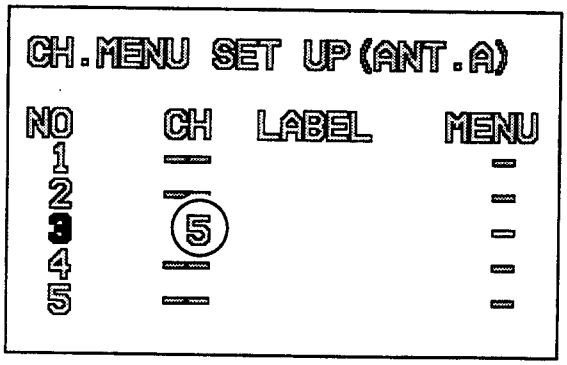
3 Turn on the INITIAL SET UP menu with the SET button and select the CH. MENU SET UP (ANT A or ANT B) with the ▲ or ▼ button.
- The selected item (▮) turns purple.



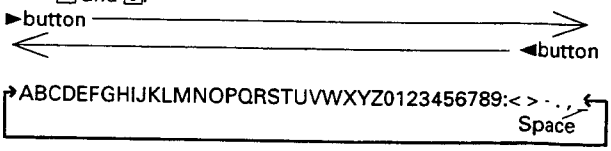
4 Press the SET button and select the number with the ▲ or ▼ button.
- In case a previously entered station label is to be modified, select the channel using the ▲ and ▼ button. (The selected channel number turn purple).

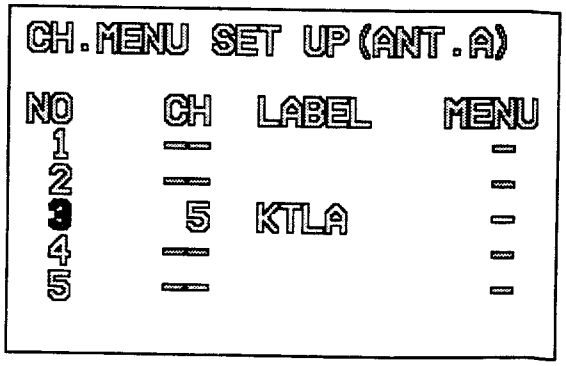


5 Select a number with the ◄ or ► button and press the SET button.



6 Press the SET button and select a character with the ◄ or ► button, and press the SET button.
- By repeating steps 4 and 5, station labels of up to 20 channels can be entered.
- To enter the input labels in No.11 to No. 20, press ▼ to make the number appear on the screen, then follow steps 4 and 5.

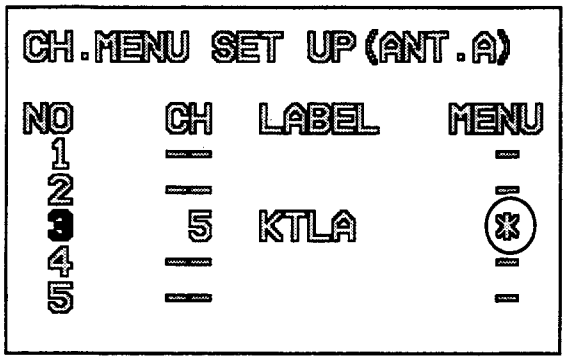




- UP to 4 characters can be entered by repeating step 6 .

7 Press the SET button to select the setting channels displayed on the monitor screen or not with the ◄ or ► button.

- ✱ ..... If ▲, ▼, ◄ or ► button is pressed when INPUT SELECTOR is set to TV, the channel will be displayed on the Monitor screen.
- — ..... If ▲, ▼, ◄ or ► button is pressed when INPUT SELECTOR is set to TV, the channel will not be displayed on the Monitor screen.



8 Press the MENU button to return to normal operation.

NOTES:

- *When selecting the channel, if any character (not number) is input in the first digit, the setting in progress will be cancelled and the previously set channel will be displayed. To make setting for channel 1-9, channel 2 for example, first enter 0 or _ (space), then 2.*

16. SPECIFICATIONS

● For SD-P5185

DISPLAY SECTION

Reception system ..... American TV standard NTSC system
Screen size ..... 60"(SD-P6085)
51"(SD-P5185)
CRT ..... 7"High focus CRT×3
Brightness (White peak) ..... 430 Foot-Lambert (SD-P6085)
600 Foot-Lambert (SD-P5185)
[100% Window signal input contrast, bright Max.]
Horizontal resolution ..... 1000 lines(SD-P6085)
830 lines(SD-P5185)
[Input digital test pattern (900 lines resolution)]
Input terminals ..... 4 video input systems,
S-VIDEO input jacks(Y/C separate INPUT) × 4
audio input systems
Output terminals ..... REC OUTPUT(To VIDEO-1)
Video output, audio output(For recording)×1
..... TV OUTPUT(Ex. to Audio/Video amplifier) ×1
System remote control terminals ..... IN/OUT
Input signal ..... Video signal:1.0 Vp-p ± 0.2V(75 ohms load)
Audio signal: 500mV rms
Input impedance ..... Video input: 75 ohms ± 10%
Audio input: 22 kilo-ohms or more
Input signal polarity ..... Synchronized negative
Output terminal signal ratings:
Output terminals
(VIDEO-1) ..... Video signal: 1 Vp-p(75 ohms load)
Audio signal: 500 mV rms (100% modulation)
Output impedance ..... Video output: 75 ohms ± 10%
Audio output: Less than 1 kilo-ohms
Audio output terminal ..... Audio signal: 500 mV rms
(100% modulation Volume MAX.)

TUNER SECTION

Circuit type ..... Video signal detection:
PLL full synchronous detection
PLL digital synthesizer system
Audio multiplex:BTSC system
Reception channels ..... VHF; CH2~CH13, UHF; CH14~CH69
CATV(STANDARD, IRC or HRC switchable)
CATV 1 CH~125CH
Antenna terminals
..... ANTENNA terminals × 2, 75 ohms UNBAL,
..... F-type connector(VHF, UHF MIXED)

AMPLIFIER SECTION

Effective output
Front both channels driven ..... 10W×10W
(THD.1% 50Hz to 15,000Hz, 8 ohms)
Tone control:
BASS ..... 8dB, 10dB(100Hz)
TREBLE ..... 8dB, 10dB(10kHz)
Built-in speaker system ..... 16 cm (6-1/2 in) Full range×2
External speaker impedance 8×16 ohms

ELECTRICAL SECTION,MISCELLANEOUS

Power requirements ..... 120 V AC, 60Hz
Power consumption ..... 280 W, 520 VA(CSA)
External dimensions
SD-P6085 ..... 1431 (W) × 675 (D) × 1429 (H) mm
56-5/16 (W) × 26-9/16 (D) × 56-1/4 (H) inch
SD-P5185 ..... 1240 (W) × 655 (D) × 1302 (H) mm
48-13/16 (W) × 25-3/4 (D) × 51-1/4 (H) inch

Weight of main unit
SD-P6085 ..... 125 kg (275 lb 10 oz.)
SD-P5185 ..... 118 kg (260 lb 3 oz.)

WIRELESS REMOTE CONTROL UNIT

Operation system ..... Programmable infrared
remote control system
Power source ..... DURACELL®"AA"MN1500 1.5V
alkaline dry cell batteries
Dimensions ..... 54 (W) × 42 (H) × 162 (D) mm
2-1/8 (W) × 1-5/8 (H) × 6-3/8 (D) inch
Weight ..... 100g (3 oz) (without batteries)

ACCESSORIES

Operating instructions 1
Warranty card 1
Remote control unit 1
DURACELL®"AA"MN15001.5 V
alkaline dry cell batteries 2
Important Safeguards card 1
Main repeater 1
Mini repeater 1
Acrylic panel 1
Acrylic panel holder H 2
Acrylic panel holder V 2

NOTE:
Specifications and design subject to possible modifications without notice due to improvements.

● For SD-P5183 and SD-P4683

DISPLAY SECTION

Reception system ..... American TV standard NTSC system
Screen size ..... 51"(SD-P5183)
46"(SD-P4683)
CRT ..... 7"High focus CRT×3
Brightness (White peak) ..... 600 Foot-Lambert (SD-P5183)
700 Foot-Lambert (SD-P4683)
[100% Window signal input contrast, bright Max.]
Actual viewing angle ..... Horizontal H = 140°
..... Vertical V = 45°
Horizontal resolution ..... 830 lines(SD-P5183)
770lines(SD-P4683)
[Input digital test pattern (900 lines resolution)]
Input terminals ..... 4 video input systems,
S-VIDEO input jacks(Y/C separate INPUT)
4 audio input systems
Output terminals ..... REC OUTPUT (To VIDEO-1)
Video output, audio output(For recording)×1
TV OUTPUT(Ex. to Audio/Video amplifier) ×1
System remote control terminals ..... IN/OUT
Input signal ..... Video signal:1.0 Vp-p ± 0.2V(75 ohms load)
Audio signal: 500mV rms
Input impedance ..... Video input: 75 ohms ± 10%
Audio input: 22 kilo-ohms or more
Input signal polarity ..... Synchronized negative
Output terminal signal ratings:
Output terminals
(VIDEO-1) ..... Video signal: 1 Vp-p(75 ohms load)
Audio signal: 500 mV rms(100% modulation)
Output impedance ..... Video output: 75 ohms ± 10%
Audio output: Less than 1 kilo-ohms
Audio output terminal ..... Audio signal: 500 mV rms
(100% modulation Volume MAX.)

TUNER SECTION

Circuit type ..... Video signal detection:
PLL full synchronous detection
PLL digital synthesizer system
Audio multiplex:BTSC system
Reception channels..... VHF; CH2~CH13, UHF; CH14~CH69
..... CATV(STANDARD, AIR, IRCor HRC switch able)
CATV 1CH~125CH
Antenna terminals
..... ANTENNA terminal,75 ohms UNBAL,
..... F-type connector(VHF, UHF MIXED)

AMPLIFIER SECTION

Effective output
Front both channels driven ..... 10W×10W
(THD.1% 50Hz to 15.000Hz, 8 ohms)
Tone control:
BASS 8dB, 10dB (100Hz)
TREBLE 8dB, 10dB (10kHz)
Built-in speaker system ..... 16 cm (6-1/2 in) Full range × 2
External speaker impedance 8 – 16 ohms

ELECTRICAL SECTION,MISCELLANEOUS

Power requirements ..... 120 V AC, 60Hz
Power consumption ..... 280 W, 520 VA(CSA)
External dimensions
SD-P5183 ..... 1240 (W) × 655 (D) × 1302 (H) mm
48-13/16 (W) × 25-3/4 (D) × 51-1/4 (H) inch
SD-P4683 ..... 1134 (W) × 605 (D) × 1232 (H) mm
44-5/8 (W) × 23-13/16 (D) × 48-1/2 (H) inch

Weight of main unit
SD-P5183 ..... 101 kg (222 lb 11 oz.)
SD-P4683 ..... 88 kg (194 lb)

WIRELESS REMOTE CONTROL UNIT

Operation system ..... Programmable infrared
remote control system
Power source
..Two DURACELL®"AA"MN15001.5V alkaline dry cell batteries
Dimensions ..... 66 (W) × 37.5 (H) × 199 (D) mm
2-5/8 (W) × 1-1/2 (H) × 7-13/16 (D) inch
Weight ..... 140g (5 oz) (without batteries)

ACCESSORIES

Operating instructions 1
Warranty card 1
Remote control unit 1
Two DURACELL®"AA"MN1500
1.5V alkaline dry cell batteries 2
Important Safeguards card 1

NOTE:
Specifications and design subject to possible modifications without notice due to improvements.

● For PRO-98

DISPLAY SECTION

Reception system ..... American TV standard NTSC system
Screen size ..... 60"(PRO-118)
51"(PRO-98)
CRT ..... 7"High focus CRTx3
Brightness (White peak) ..... 400 Foot-Lambert (PRO-118)
550 Foot-Lambert (PRO-98)
[100% Window signal input contrast, over Max.]
Horizontal resolution ..... 1000 lines
[Input digital test pattern (900 lines resolution)]
Input terminals ..... 4 video input systems,
S-VIDEO input jacks (Y/C separate INPUT) x 4
4 audio input systems
BNC input jack x 1
CENTER IN jack x 1
Output terminals ..... REC OUTPUT (To VIDEO-1)
Video output, audio output (For recording)x1
..... TV OUTPUT (Ex. to Audio/Video amplifier) x1
System remote control terminals ..... IN/OUT
Input signal ..... Video signal:1.0 Vp-p ± 0.2V(75 ohms load)
Audio signal: 500mV rms
Input impedance ..... Video input: 75 ohms ± 10%
Audio input: 22 kilo-ohms or more
Input signal polarity ..... Synchronized negative
Output terminal signal ratings:
Output terminals
(VIDEO-1) ..... Video signal: 1 Vp-p(75 ohms load)
Audio signal: 500 mV rms(100% modulation)
Output impedance ..... Video output: 75 ohms ± 10%
Audio output: Less than 1 kilo-ohms
Audio output terminal ..... Audio signal: 500 mV rms
(100% modulation Volume MAX.)

TUNER SECTION

Circuit type ..... Video signal detection:
PLL full synchronous detection
PLL digital synthesizer system
Audio multiplex:BTSC system
Reception channels ..... VHF; CH2~CH13, UHF; CH14~CH69
CATV(STANDARD, IRC or HRC switch able)
..... CATV 1CH ~125CH
Antenna terminals
..... ANTENNA terminalsx2 ,75 ohms UNBAL,
..... F-type connector(VHF, UHF MIXED)

AMPLIFIER SECTION

Effective output
Front both channels driven 10Wx10W
(THD.1% 50Hz to 15,000Hz, 8 ohms)
Tone control:
BASS ..... 8dB, 10dB(100Hz)
TREBLE ..... 8dB, 10dB(10kHz)
Built-in speaker system ..... 16 cm (6-1/2 in) full rangex2
External speaker impedance 8x16 ohms

ELECTRICAL SECTION, MISCELLANEOUS

Power requirements ..... 120 V AC, 60Hz
Power consumption ..... 300 W, 550 VA(CSA)
External dimensions
PRO-118 ..... 1316 (W) x 675 (D) x 1429 (H) mm
51-3/4 (W) x 26-9/16 (D) x 56-1/4 (H) inch
PRO-98 ..... 1170 (W) x 655 (D) x 1302 (H) mm
46-1/16 (W) x 25-3/4 (D) x 51-1/4 (H) inch

Weight of main unit
PRO-118 ..... 138 kg(304 lb 4 oz.)
PRO-98 ..... 116 kg(255 lb 12 oz.)

WIRELESS REMOTE CONTROL UNIT

Operation system ..... Programmable infrared
remote control system
Power source ..... DURACELL®"AA" MN1500 1.5 V
alkaline dry cell batteries
Dimensions ..... 54(W)x42(H) x162(D) mm
2-1/8(W)x1-5/8(H)x6-3/8(D) inch
Weight ..... 100g(3 oz)(without batteries)

ACCESSORIES

Operating instructions 1
Warranty card 1
Remote control unit 1
DURACELL®"AA" MN1500 1.5 V
alkaline dry cell batteries 2
Important Safeguards card 1
MAIN REPEATER 1
MINI REPEATER 1
Protective screen 1
Magic tape A 2
Magic tape B 2
Upper frame 2
Lower frame 2
Side frame cover 2
Screw 14.3 MM 12 (PRO-118)
8 (PRO-98)
Screw 10 MM 12 (PRO-118)
8 (PRO-98)

NOTE:
Specifications and design subject to possible modifications without notice due to improvements.